Catalogue report

LUT School of Business and Management

Master's Programme in Strategic Finance and Business Analytics (MSF)

Master's Programme in Strategic Finance and Business Analytics (MSF) 2018-19

This Study Guide includes the learning outcomes, degree structure and curriculum of the master's programme in Strategic Finance and Business Analytics (MSF) 2018-19.

• Master of Science in Economics and Business Administration, M.Sc. (Econ. & Bus.Adm.), 120 credits, duration 2 years.
• Higher university degree, gives eligibility to scientific doctoral studies.

LEARNING OUTCOMES OF THE PROGRAMME

After completing the MSF programme the students will be able to:
• describe and examine main theories and concepts of finance and international financial markets
• understand the supporting role of information technology in business and in decision-making and evaluate possibilities to use information technology in business development
• demonstrate analytical financial and business skills in practice
• conduct an independent scientific research project, report and present it professionally

Degree structures

Strategic Finance and Business Analytics MSF degree structure 2018-19

Core studies 78 ECTS cr
Specialisation studies 36 ECTS cr
Language studies 6 ECTS cr

Total of the degree min. 120 ECTS cr.

Master's Programme in Strategic Finance and Business Analytics 2018-2019 (MSF)(E)

Degree structure status: accepted

Academic year: 2018-19

Beginning date of the academic year: 01.08.2018

Complementary studies

Complementary studies must be completed in addition to the actual Master's level studies in business administration. They are not included in the Master's degree.

Important! Students who have received their education in Finnish or Swedish must demonstrate in studies included in education for a lower or higher university degree that they have attained proficiency in Swedish required by decree (Government Decree on University Degrees, 6§). If the required proficiency in Swedish has not been demonstrated in a previous degree, it must be demonstrated in studies at LUT in addition to other complementary studies. However, this is not required of students who have been educated in a language other than Finnish or Swedish or who have been educated abroad. This rule applies to all degree programmes.

Students, who have graduated as B.Sc. (Econ. & Bus. Adm.) in Finland:

A130A0050 Introduction to Studies of Economic Sciences for Master's Students, 3 ECTS cr

A350A0250 Multivariate and Econometric Analysis Methods 6 ECTS cr

All other students study in addition also the course:

A350A0050 Business Research Methods, 6 ECTS cr.

Core Studies, Strategic Finance (min 44 cr)

KaMSF1: MSF Core Studies, 44 - 54 cr
 Obligatory studies 30 cr
  A220A0000: Financial Econometrics, 6 cr
  A220A0101: Derivatives and Financial Risk Management, 6 cr
  A220A0200: International Financial Management, 6 cr
  A220A0600: Banking and Insurance Finance, 6 cr
  A220A0650: Financial Theory and Valuation, 6 cr
 Elective studies, min 14 cr
  A130A2200: Internship for Master's Programmes, 2 - 6 cr
  A210A0200: Empirical Strategy Research, 6 cr
  A210A0702: New Venture Management, 6 cr
  A220A0400: Empirical Research in Finance, 6 cr
  A330A0112: Strategic Marketing Project, 6 cr
  A350A0500: Sustainable Strategy and Business Ethics, 3 cr
  A365A0711: Accenture Case Workshop, 3 cr
  CS31A0720: Basics of ERP systems, 6 cr
  CS30A1372: Creative Design and Problem Solving, 6 cr
  CS30A1655: Advanced Course in Strategic Management, 6 cr
  CT70A4000: Business Process Modelling, 6 cr

Core Studies, Analytics for Finance (min 34 cr)
KaSOMAnFi: Analytics for Finance, 25 - 35 cr
Obligatory studies 22 ECTS cr
A210A0601: Information Systems in Corporate Management and Decision-making, 6 cr
A220A0053: Investment and Business Analysis with Excel, 6 cr
A220A0752: Analytics for Business, 6 cr
BM20A5001: Principles of Technical Computing, 4 cr

Elective Studies, min 12 cr

A220A0550: Advanced Decision-making, 6 cr
BM20A6500: Simulation and System Dynamics, 6 cr
CS38A0020: Optimization in business and industry, 6 cr
CS38A0040: Marketing analytics, 6 cr

Specialisation Studies (min 36 cr) KaMsfSs:

Obligatory Specialisation Studies
A210A0350: Real Options and Managerial Decision Making, 6 cr
A220A9001: Master's Thesis, Strategic Finance, 30 cr

Language Studies (min 6 cr)

Foreign language (not English) Please see:

https://www.saimia.fi/en-fi/studies/study-information/language-centre/lut-saimaa-uas

Free Elective Studies

Course descriptions

Descriptions of courses and study modules included in the degree structures

KaMSF1: MSF Core Studies, 44 - 54 cr

Validity: 01.08.2016 -
Form of study: Major studies
Type: Study module
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F

No course descriptions.

Obligatory studies 30 cr

A220A0000: Financial Econometrics, 6 cr

Validity: 01.08.2011 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F

Teachers: Jan Stoklasa

Note:

Additional requirements for doctoral students: read Mikosch, T., Kreiß, J., Davis, R. A., & Andersen, T. G. (2009). Handbook of Financial Time Series. Springer eBooks – selected part(s) after consulting with the teacher in charge, term paper will be written by the student on the selected advanced topic.

If the course enrollment is more than the course maximum, then students are accepted in the following order: students from the MSF and MBAN programmes, other master´s programme students, other students.

Year:

M.Sc. (Econ. & Bus. Adm.) 2

Period:

1

Teaching Language:

English

Teacher(s) in Charge:

D.Sc. (Tech.) Jan Stoklasa

Aims:

At the end of this course a student is expected to have a concise overall understanding of the mechanisms behind the econometrics models covered in the course so that he/she:
- Is able to describe the main ideas of the models and methods and assess the appropriateness of their use in specific application cases, incl. the testing of assumptions of the models
- Is capable of formulating the main questions of his/her empirical research in terms of the econometrics models and their parameters
- Is able to select appropriate methods for the given practical application in financial data analysis and construct appropriate econometrics models and assess their quality
- Is able to design econometrics models for financial data prediction (in case of time series)
- Is able to interpret the outputs of the econometrics models in the context of financial data analysis
- Is able to use the methods and their outputs to explain phenomena in financial data and to assess hypothesis concerning financial data
- Is able to utilize the models in financial theory building and assessment as well as in time series analysis and prediction and financial data analysis in general.
- Is able to implement the designed econometrics models in MATLAB using its econometrics package.
The models covered in this course include for example:
Classical linear regression models, univariate time series models, ARMA processes, multivariate time series models, models for simultaneous equations systems, vector autoregressive (VAR) model, ARCH and GARCH-type models.

Contents:

This course deepens students' knowledge on empirical research methods in financial econometrics. The focus is on the empirical techniques used most often in the analysis of financial markets and how they are applied to actual market data.The course is designed to give advanced-level (Master) knowledge of financial econometrics – that is to provide sufficient insight in the financial econometrics models and hypothesis testing and practical experience with building models for financial econometrics in MATLAB. The course covers four different areas in econometrics: 1) univariate and multivariate statistical analyses, 2) time series models, 3) modeling volatility and correlation, 4) modeling long-run relationships in financial markets. The students will use MATLAB econometrics package to run analyses.

Teaching Methods:

Lectures & exercises: 36 h, period 1. Preparation for lectures and exam: 64 h, period 1. home assignments: 60 h, period 1. Total workload: 160 h.

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Grade 0-5, on the basis the exam (50%) and home assignments (50%). Students are required to achieve 50 percent of the maximum points in both.

Course Materials:

1. Brooks, Chris: Introductory econometrics for finance. Cambridge, 2002 or newer (Text book) 2. Handouts in class and all additional material required by the lecturer 3. MATLAB materials available on the mathworks www-site

Prerequisites:

Required: BM20A4301 Johdatus tekniseen laskentaan or BM20A5001 Principles of technical computing Compulsory bachelor's level courses in finance and economics.

Limitation for students? (Yes, number, priorities/Leave empty):

Yes, 80. If the course enrollment is more than the course maximum, then students are accepted in the following order: students from the MSF and MBAN programmes, other master´s programme students, other students.

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No

A220A0101: Derivatives and Financial Risk Management, 6 cr

Validity: 01.08.2014 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Eero Pätäri

Year:

M.Sc. (Econ. & Bus. Adm.) 2

Period:

1

Teaching Language:

English

Teacher(s) in Charge:

Professor, D.Sc. (Econ. & Bus. Adm.) Eero Pätäri

Aims:

The aim of the course is to deepen the students' knowledge about the use of derivatives for hedging purposes. At the end of the course a student is expected:
- to understand the interrelationships of spot markets and derivative markets and their arbitrage relations
- to understand the internal arbitrage relations within the derivative markets
- to be able to form and implement the optimal hedging strategy for different hedging needs (including the choice of the most appropriate derivative for the particular purpose)
- to be familiar with the standard methods of derivative pricing and to be able to apply these methods in the pricing of exotic derivatives

- to know the principles of risk management practices of derivative market makers
- to know the basic methods of Value at Risk calculations
- to understand the practices followed in credit risk management and the causality between default risk and the risk premium of fixed-income securities
- to know the most commonly used credit derivatives

Contents:

Pricing of standard derivatives (i.e. forwards, futures, swaps and options), hedging strategies and practices. Value at Risk, credit risk management, credit derivatives. Applied methods for pricing of exotic derivatives, risk management practices of derivative market makers.

Teaching Methods:

Video lectures and class exercises 18 + 18 h, preparation for class exercises 54 h. Written exam and preparation for the exam 70 h. Total workload for the student 160 h.

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Graded 0 – 5 on the basis of the exam and exercise performance. Evaluation 0-100 points, written exam 90–100% and exercises 0–10% depending on the student's activity in exercises.

Course Materials:

1. Hull, John C.: Options, Futures, and Other Derivatives, 2006 or newer edition. 2. Lecture handouts.

Prerequisites:

Only for the second-year MSF students or other M.Sc. students that have comparable financial skills

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No

A220A0200: International Financial Management, 6 cr

Validity: 01.08.2011 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Sheraz Ahmed

Note:

This course is only for master's level students including exchange students.

Year:

M.Sc. (Econ. & Bus. Adm.) 1

Period:

1-2

Teaching Language:

English

Teacher(s) in Charge:

Associate Professor, D.Sc. (Econ. & Bus. Adm.) Sheraz Ahmed

Aims:

After successful completion of the course, the student will be able to:
- explain the structure and functions of MNCs
- compare the challenges concerning different legal environments, tax considerations and business risks faced by MNCs
- model the relationship between exchange rates and micro- and macro-level determinants of changes in exchange rates
- distinguish the foreign exchange exposure and risks of conducting international business
- measure the impacts of exchange rates on the profitability, growth, capital structure and valuation of MNCs
- design unique business idea of an MNC and build its international business strategies
- develop team working skills in multinational environment.

Contents:

The course is designed to provide advanced-level (Master) knowledge of multinational financial management. The course covers four different areas in international financial management: 1) The International financial environment, 2) exchange rate behavior and determination of currency exchange rates, 3) exchange rate exposures and risk management, and 4) long-term asset and liability management of large MNCs.

Teaching Methods:

Lectures: 24 h, Home assignments: 32 h, Term paper writing: 32 h, Preparation for lectures/quizzes and exam: 72 h. Total workload: 160 h.

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Grade 0-5 on the basis of 100 points. Written Exam: 50 %, Home assignments: 10%, Quizzes: 10 %, Term paper: 30 %. Minimum passing criteria is 50 % of the points in term paper and exam.

Course Materials:

1. Madura and Fox: International Financial Management, European edition
2. Handouts in class and all additional material required by the lecturer

Prerequisites:

Completed bachelor's level (B.Sc.) courses in finance and/or economics.

Places for exchange-students? (Yes, number/No):

max 15

Places for Open University Students?(Yes, number/No):

max 5

A220A0600: Banking and Insurance Finance, 6 cr

Validity: 01.08.2014 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F

Teachers: Mikael Collan

Note:

Multiple lecturers including visitors - the course is a self-study course with connected lectures

Year:

M.Sc. (Econ. & Bus. Adm.) 1

Period:

4

Teaching Language:

English

Teacher(s) in Charge:

Professor, D.Sc. (Econ. & Bus. Adm.) Mikael Collan

Aims:

Learning outcomes: This course provides an introduction to theoretical and applied issues related to banking and insurance underwriting. By the end of the course, students will have a general knowledge of the following topics:
- The role of banks in the economy
- Business lines and risk management in banking
- Central banking and bank regulation
- Insurance underwriting, risks and insurances, insurance pricing
- International bank-like organizations (IMF, World Bank, BIS, and others)
- Financial crises
- Other, modern lending practices such as peer-to-peer financing and crowd funding
- Emerging markets´ financial systems and banking issues

Contents:

Core content: The content of the course consists of selected theories and applications related to banking and insurance underwriting. The topics include the role of banks in the economy, especially as providers of liquidity and payment services, transforming assets, managing risks, processing information, and monitoring borrowers – with an international perspective. Additional content: Introduction to central banking and bank regulation as well as basic concepts of risk and insurance. International financial players (IMF, World Bank, BIS, and others) Special content: The course provides an overview of selected management and monitoring tools used by banks and insurance companies, peer-2-peer financing and crowd funding. Investment banking related valuation.

Teaching Methods:

Lectures 24 h, independent reading assignments, peer evaluation of essay work 2h, preparation for lectures 54 h. Written exam and preparation for the exam 80 h. Total workload 160 hours.

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

Yes

Assessment:

Grade 0-5, evaluation 0-100 points, on-line quizzes 25%, essay 25%, written exam 50%. Most likely there will be a possibility to do a report for partial fulfillment of the course requirements.

Course Materials:

Course book(s), Lecture material, Additional readings – majority of the materials will be available on the Moodle. Some lectures will be recorded and available as video.

Prerequisites:

Only for the students accepted for the Master's Degree Programmes in business administration @ LUT

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No

A220A0650: Financial Theory and Valuation, 6 cr

Validity: 01.08.2014 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Sheraz Ahmed

Note:

This course is primarily for master level students.

Year:

M.Sc. (Econ. & Bus. Adm.) 1

Period:

3

Teaching Language:

English

Teacher(s) in Charge:

Associate Professor, D.Sc. (Econ. & Bus. Adm.) Sheraz Ahmed

Aims:

After successful completion ofthis course, the student will be able to:
- demonstrate advanced level skills in describing corporate finance theories
- outline the determinants of financing needs and optimal capital structure
- solve key problems related to agency theory and information asymmetry
- analyze the investment and payout strategies of corporations
- evaluate the empirical aspects of corporate finance and asset valuation
- estimate valuation of corporate debt and equity under uncertainty

Contents:

This course introduces the core theory of modern corporate finance and financial management, with a focus on capital markets and investments. The course presents the insights of corporate finance theory emphasizing on the application of theory in real time financial decisions. Topics include corporate financing decisions and efficient markets, capital structure theories and limitations, agency theory, risk-return tradeoff, cost of capital and capital budgeting, valuation of financial securities investments and payout policy.

Teaching Methods:

Lectures 24 h, Preparation for lectures and exam 72 h, Home assignments 16 h, Preparation for in-class quizzes 16 h, Term paper 32 h. Total workload 160 h.

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Grade 0-5 on the basis of 100 points. Exam: 60 %,Term paper: 20 %, Home Assignments: 10%, In-class quizzes: 10%.
Students are required to get 50 % of the maximum points in term paper and exam in order to pass the course.

Course Materials:

1. Ross S.A., Westerfield R.W. and Jaffe J: Corporate Finance, McGraw Hill Higher Education. (chapters specified by lecturer)
2. Copeland T.E., Weston J.F. and Shastri K: Financial theory and corporate policy. Pearson Education Inc. (chapters specified by lecturer).
3. All additional material distributed by the lecturer.

Prerequisites:

A210A0000 Arvopaperimarkkinaoikeus (Basics of Securities Markets), A250A0100 Finanssi-investoinnit (Investments) OR similar bachelor's level (B.Sc.) courses in accounting and finance.

Places for exchange-students? (Yes, number/No):

max 15

Places for Open University Students?(Yes, number/No):

max 5

Elective studies, min 14 cr

A130A2200: Internship for Master's Programmes, 2 - 6 cr

Validity: 01.08.2016 -
Form of study: Basic studies
Type: Practical training
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F

Note:

This course concerns students in MIMM, MSF, MSIS and MSM master´s programmes. Registration for the course directly to the teacher any time during the academic year but before the planned practical training. The instructions for the training are given by the teacher. NB! Bachelor's and Master's degrees can include a total of 12 credits of practical training. The student can divide the credits in both of the degrees or the training can be included in its entirety in one of the degrees. However, in Master's degrees, maximum of 6 ECTS credit are acceptable as electives in core studies, and extra ECTS credits can be accepted in electives in Master's degrees. The student is free to find a suitable company / organization of his/her choice. The planned internship (organization, time, content, tasks) needs to be agreed by the internship coordinator in advance. It is advisable that Master´s programmes´ students would have an international element in their internships. Only the internship, which the student does during his/her studies at LUT, is acceptable.
The internship can be accepted only if the working hours are an average of 10 hours per week.

Student cannot apply for credits both for internship and for Project Work Course (A130A1000) from the same practical training.

Year:

M.Sc. (Econ. & Bus. Adm.) 1-2

Period:

1-4

Teaching Language:

English

Teacher(s) in Charge:

Please see UNI-portal: https://uni.lut.fi/en/web/lut.fi-eng/internship (UNI-portal > Degree Programmes > Business Administration > Instructions > Internship).

Aims:

The aim of the internship for Master's Programmes is to provide the students an opportunity to put their theoretical knowledge into practice, and to build networks in the job market. The student applies the knowledge learned in the university studies to complete the work tasks in a target organization. The student also develops skills in order to apply knowledge in his/her future career. In addition, the student gains new experience-based knowledge that can be utilized in studies, for example in assignments and in Master's Thesis.

Contents:

Applying previously learned knowledge, Gaining experience-based knowledge, Writing a report.

Teaching Methods:

The practical training period in the target company 4 – 12 weeks, writing of the report (2-3 pages). Periods 1 – 4. Total workload in study hours 52 – 160 h (in work hours 160 – 480 h). See UNI-portal for instructions and further information: UNI-portal > Degree Programmes > Business Administration > Instructions > Internship.

Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Accepted / failed, report 100%.

Course Materials:

See UNI-portal for instructions: UNI > Degree Programmes > Business Administration > Instructions > Internship.

Prerequisites:

Bachelor's studies. For MIMM students: A330A0300 Strategic Global Marketing Management, A330A0251 Internationalization of the Firm, A350A0300 Technology and Innovation Management. For MSF students: A220A0200 International Financial Management, A220A0650 Financial Theory and Valuation, A220A0101 Derivatives and Financial Risk Management. For MSM students: A310A0101 Strategic Supply Management

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No

A210A0200: Empirical Strategy Research, 6 cr

Validity: 01.08.2011 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Päivi Maijanen-Kyläheiko, Kaisu Puumalainen

Year:

M.Sc. (Econ. & Bus. Adm.) 1-2

Period:

3-4

Teaching Language:

English

Teacher(s) in Charge:

Professor, D.Sc. (Tech.) Kaisu Puumalainen
Post Doctoral Researcher, D.Sc. (Econ.) Päivi Maijanen-Kyläheiko

Aims:

After taking the course the student
•knows the basic empirical application types and theories of strategy research
•is familiar with the evolution, state-of-the art and future directions of research within four different central themes of empirical strategy research
•can independently select a specific theme related to strategy, technology or innovation research and conduct a critical and systematic literature review on this theme
•collect and analyze empirical data around this theme, and subsequently report, interpret and evaluate the results and their practical and theoretical implications

Contents:

Core content: Four specific themes of strategy research: empirical testing of main theories, research strategies and designs and main results. The themes may include e.g. resource-based view, organizational cognition, sustainable strategies and competitiveness of the firm. The themes are related to current research projects, and may vary each year.
Additional content: measurement of firm performance, specific methods of empirical research, e.g. event study, qualitative comparative analysis.
Special content: important authors and publication forums of empirical strategy research.

Teaching Methods:

Lectures 18 h , exercises 6 h and independent preparation for lectures + pre-lecture tasks 40 h, 3rd period Exercises 6 h, team assignment + preparing the presentation 78 h, seminar 12 h, 4th period Total workload 160 h.

Suitability for doctoral studies (Yes/Leave empty):

Yes

Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Grade 0-5, evaluation 0-100 points. pre-lecture tasks 40% Written seminar report 40% Oral presentation of seminar assignment 20%

Course Materials:

Collection of articles

Prerequisites:

Multivariate and econometric analysis methods or Quantitative research methods, recommended Basic course in econometrics

Places for exchange-students? (Yes, number/No):

max 5

Places for Open University Students?(Yes, number/No):

max 5

A210A0702: New Venture Management, 6 cr

Validity: 01.08.2016 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Anna Vuorio, Sanni Väisänen, Terhi Virkki-Hatakka, Markku Ikävalko, Antero Tervonen

Note:

The course is an advanced level course, but it can also be placed in bachelor's studies. Course is carried out in cooperation with several courses of Mechanical Engineering and Electrical Engineering Degree Programmes.

Year:

B.Sc. (Tech.) 2-3, B.Sc. (Econ. & Bus. Adm.) 2-3, M.Sc. (Tech.) 1-2, M.Sc. (Econ. & Bus. Adm.) 1-2

Period:

1-3

Teaching Language:

English

Teacher(s) in Charge:

Post-doctoral researcher, D.Sc.(Bus. Adm.) Anna Vuorio
Associate professor, D.Sc. (Bus. Adm.) Markku Ikävalko
Project manager, D.Sc. (Tech.) Terhi Virkki-Hatakka
University Lecturer, D.Sc. (Tech.) Antero Tervonen
Post-doctoral researcher, D.Sc. (Tech.) Sanni Väisänen
M.A. in Russian language and philosophy James F. Hyneman

Aims:

By the end of the course, students will be able to
- apply the skills and knowledge accumulated from previous courses into practice,
- recognize and develop new business ideas,
- manage creativity and learn methods for idea generation,
- plan different business operations,
- manage and organize business as a whole and act as a manager,
- create various business and management documents and reports,
- communicate issues about the project with other firm members.

Contents:

Recruited business experts together with engineering experts (= mainly mechanical engineering students) explore their creativity and create new business ideas by forming creative swarms. In these swarms of individuals, new business ideas are created and developed further. After evaluating ideas, business experts form virtual firms (= small groups) with 4-6 individuals and develop elements of business activity around their idea in cooperation with engineering experts.
The entire staff of the firm is self-organized and takes care of the establishment of the virtual firm. Business experts formulate a business plan and financial plan in cooperation with possible engineering experts of the firm. The tasks of business experts also include planning of various business activities, implementing those activities and reporting: management, financial management, cost accounting, budgeting, finance, marketing, supply chain management and logistics in cooperation with product planning and manufacturing.
The board and the Investors' board (= the teachers of different accompanied courses and a business mentor outside the university) support firm operations.

Teaching Methods:

Board steering sessions (= introductory lectures) 12 h, 1st period. Board steering sessions 4 h and the board meetings 3 h, 2nd period. Board steering sessions 4 h and the board meetings 4 h, 3rd period.

Independent project work by the staff of the virtual firm (the staff mainly defines working schedules, practices and responsibilities by itself) 133 h, 1st-3rd periods. Total workload 160 h.

Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Grade 0-5, evaluation 0-100 points; project work 60 % (includes internal activities of the virtual firm, different written assignments of the business experts and performance in board meetings), peer review by the members of the firm 20 %, and self-evaluation 20%.

Course Materials:

Material of the steering session of the board (= lecture notes). Material sought by the staff of the virtual firm.

Prerequisites:

The basic studies of bachelor's degree in Business Administration or bachelor's degree in Industrial Engineering and Management

Limitation for students? (Yes, number, priorities/Leave empty):

Yes, 50; own quotas for Business Administration students and Industrial Engineering and Management students; priority to master degree students.

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No

A220A0400: Empirical Research in Finance, 6 cr

Validity: 01.08.2013 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Sheraz Ahmed

Note:

This course is strictly for final year master degree students. Pre-requisites must be completed before taking part in this course. Working knowledge of MATLAB, SPSS or any other statistical software is required.
This course will be lectured only every second year. The course will be lectured in 2018-19, not lectured in 2019-20.

Lectured every other academic year (Yes, next realization year/Leave empty):

Yes, 2020-2021

Year:

M.Sc. (Econ. & Bus. Adm.) 2

Period:

2

Teaching Language:

English

Teacher(s) in Charge:

Associate Professor, D.Sc. (Econ. & Bus. Adm.) Sheraz Ahmed

Aims:

After successful completion ofthis course, the student will be able to:
- extend his/her knowledge in the areas of empirical asset pricing and corporate finance
- select appropriate models and techniques to answer questions related to finance and business analytics
- examine the relationship among different variables in line with stated hypotheses and evaluate the significance of results
- interpret the results of recent and relevant research in finance
- develop a research plan on an empirical topic for master thesis in strategic finance and business analytics

Contents:

This advanced level courseprovides skills to undertake quantitative research project in finance. Animportant part of this course is to review the empirical literature onclassical as well as recent topics in Finance and Business Analytics. Studentslearn to apply the quantitative models on data provided by the lecturer ordownloaded from Thomson Reuters Datastream. Main topics to cover during thecourse are: asset pricing models, volatility modelling, impactof macroeconomic indicators on stock markets returns and volatility, investmentdecisions including mergers and acquisitions, ownership structure, payout decisions,corporate governance and trading algorithms using multi-criteria decisionmaking. The statistical techniques include linear and non-linear models, eventstudies, panel data, time series and cross-sectional models and relevantspecification tests in econometrics.

Teaching Methods:

Lectures 20 h, Presentation seminars 8 h, Literature review and preparation for presentation 26 h, Empirical project and preparation for presentation 40 h, Research proposal 66 h. Total workload 160 h.

Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Grade 0–5 on the basis of 100 points
- Summary of the selected research paper & presentation (20p)
- Empirical project & presentation (30p)
- Research proposal (50p)

Course Materials:

Selected chapters offollowing books are used in the lectures:
1. Elton, Gruber, Goetzmann: Modern Portfolio Theory and Investment Analysis. WILEY
2. Brooks, Chris: Introductory Econometrics for Finance, Cambridge University Press.
3. Baltagi, B.H.: Econometric Analysis of Panel Data, WILEY
4. All journals papers and additional material provided by the lecturer.

Prerequisites:

At least two of the following courses must be completed before taking this course: - A350A0250 Multivariate and Econometric Analysis Methods, - A220A0000 Financial Econometrics, - A220A0052 – Investment and Business Analysis with Excel, and BM20A5001 Principles of Technical Computing

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No

A330A0112: Strategic Marketing Project, 6 cr

Validity: 01.01.2018 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Lasse Torkkeli, Jari Varis

Note:

Replaces the course A350A0111 Strategy Project, only for Master's level students.
Year:

M. Sc. (Econ. & Bus. Adm.) 1
Period:

3-4

Teaching Language:

English
Teacher(s) in Charge:

Associate Professor Lasse Torkkeli
Associate Professor Jari Varis
Aims:

Learning outcomes:
1. To be able to explain the most commonly used strategic tools & frameworks.
2. To analyze the real-life situation and context of a given case organization.
3. To discuss and select the appropriate strategy tools and frameworks for the given case problem.
4. To apply the frameworks and tools of strategy and marketing to compose a justified and concrete plan of action.
5. To be able to collaborate in teams.
6. To be able to plan and execute a project work in a given time-line.
7. To develop a professional written project report.
8. To propose a solution and recommendations verbally for the case.
Contents:

This course applies problem-based learning to a concrete strategy development task on marketing from a real case organization. Students work in groups with the given project that starts with a situational analysis and continues with both strategy development and marketing description activities, resulting in a concrete strategic action plan for the organization. Each group gets individual coaching from a project supervisor. The course is organized in cooperation with Green Campus Innovations.

Teaching Methods:

21 h of pre-work in groups: returning a strategy tool -related presentation in Moodle, 8 hours of introductory seminar,
16 hours of seminars including final presentations of the projects to the representatives of the case organisations,
7 h of project coaching meetings with the project supervisor, Independent project work in teams: 100 h (finding literature, group meetings, Information gathering, analysis, writing the report) Written final report, presentation of the project work (preparation 8 h). Total student workload: 160 h.
Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Grade 0-5, evaluation 0-100 points. Strategy tool pre-assignment: pass/fail. Max 100 points from project work. Grading of projects: 70 % supervisors, 30 % firm representative.

Course Materials:

Handout materials. Other material depending on the project work.

Limitation for students? (Yes, number, priorities/Leave empty):

Yes, 80. Only for M.Sc. level students in business administration.

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No

Description and DL of the company assignment:

A350A0111 STRATEGIC MARKETING PROJECT, 6 ects
Strategic marketing project course is a Master's level course taught in the EPAS-accredited Master's in International Marketing Management –programme offered by LUT School of Business & Management. The course applies problem-based learning to a concrete strategy development task related to marketing from a real case organization. Students work in groups with the given project that starts with a situational analysis and continues with both strategy development and business model description activities, resulting in a concrete strategic marketing action plan for the organization. Each group gets individual coaching from an academic project supervisor.
Strategy development tasks from the case organizations can be related to all kinds of real-life challenges that are strategically important from the business perspective and relate to marketing. Prior challenges solved on the course have for example been related to the development of marketing strategy, social media marketing strategy, competitor analysis, internal branding and business model development. Usually, there will be two groups working with the same topic.
From the case organization the course requires max two hours of time for initial briefing meeting with the students and the academic instructor (either face-to-face/skype, schedule separately agreed) at the end of January/beginning of February and participation in the final seminar at the end of the course on April (exact time to be confirmed). Company representatives participate in the final evaluation of the project work (worth 30 % of the total assessment).
The teaching language of the course is English and groups are internationally diverse. Participation is free of charge.
All case topics need to be confirmed latest on week 2.

A350A0500: Sustainable Strategy and Business Ethics, 3 cr

Validity: 01.08.2013 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Paavo Ritala, Karl-Erik Michelsen, Laura Olkkonen

Note:

Only Master-level students, i.e those that have completed a Bachelor's degree or equivalent before the beginning of the course, are allowed to enroll.

Year:

M.Sc. (Econ. & Bus. Adm.) 1

Period:

2

Teaching Language:

English

Teacher(s) in Charge:

Professor, D.Sc. Paavo Ritala
Professor, Ph.D. Karl-Erik Michelsen
Post-doctoral Researcher, Ph.D. Laura Olkkonen

Aims:

This course concentrates on the topical phenomena and concepts related to the creation and development of sustainable strategy, shared value creation and business ethics in organisations. The concepts will be investigated both from the viewpoints of academic research and practical relevance. Students will learn to discuss and synthesize the recent literature, examine the links of contemporary topics to previous research and assess the practical relevance of the issues through concrete examples. The learning outcomes of the course are the following:
1.To assess the topics of sustainable strategy and business ethics in the firm level as well as within the broader institutional context from both academic and practitioner perspectives.
2.To discuss and debate on the conflicting perspectives of sustainability and ethics in business.
3. To be able to analyze the practical relevance of sustainable business strategy

Contents:

The content of the course is based on topical issues related to sustainable strategy and business ethics from different approaches.
The core content includes: - Basics of sustainability and ethics in business context - Recent trends and developments of sustainable strategy and corporate responsibility - Sustainability issues in the supply network - Key business ethics challenges

Teaching Methods:

In-class hours: 2. period: 12 hours of lectures, 6 hours of interactive theme sessions and seminars, and an interactive panel session with business and societal experts (4 hours).
Out-class hours: Preparation for the theme sessions and seminars: 8 h. Course assignment in groups 50 h. Total hours: 80 h.

Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

No written exam. Final grade 0-5. 100 points based on course assignment conducted in groups.

Course Materials:

Academic and practitioner-oriented articles on sustainability and business ethics. Readings list distributed in Moodle.

Prerequisites:

Only Master-level students, i.e. those that have completed a Bachelor's degree or equivalent before the beginning of the course, are allowed to enroll.

Places for exchange-students? (Yes, number/No):

max 10

Places for Open University Students?(Yes, number/No):

max 5

A365A0711: Accenture Case Workshop, 3 cr

Validity: 01.08.2016 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Lasse Torkkeli, Agnes Asemokha

Note:

Maximum of 35 students, based on a pre-assignment. Teams are formed randomly at the beginning of the day. The best student groups will gain access to Accenture Apprentice network.
Only for Master's level students.

Year:

M.Sc. (Tech.) 1, M.Sc. (Econ. & Bus. Adm.) 1

Period:

Intensive week 9

Teaching Language:

English

Teacher(s) in Charge:

Associate Professor Lasse Torkkeli
MSc. (Econ. & Bus. Adm.) Agnes Asemokha

Aims:

After completing the course, the student will have the ability to apply case methodology (issue based problem solving) used by Accenture, in order to analyze real-life business cases, to evaluate possible solutions to strategic and managerial challenges, and to create professional presentations of the solution. The learning outcomes of the course are the following:
1.To identify the different stages of issue based problem solving case methodology
2.To apply the case methodology in practice to analyze problems
3.To deduce meaningful implications from real-life marketing case issues
4.To construct a written summary of a methodology textbook
5.To organize a multi-cultural group in order to analyze a case problem in a brief amount of time
6.To evaluate possible solutions to a marketing case problem.
7.To create a and present a professional consulting presentation
8.To propose and to defend consulting recommendations to professional consultants
9.To estimate the importance of sustainability in business management through case methodology.

Contents:

Issue based problem solving methodology, strategic decision-making, application of frameworks, presentation skills and group work

Teaching Methods:

8 hours of interactive seminars, intensive week 9. Preparation for workshop 18 h. Written assignments 54 h. Total workload for student 80 h.

Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Accepted/Failed

Course Materials:

http://www.ollisalo.net/koc/king_of_cases.pdf https://www.mindtools.com/ Hammond (1976). Learning by the case method. Harvard Business School material.

Prerequisites:

This workshop is targeted at students who have already completed their bachelor degree and are studying in masters' programmes in business administration, industrial engineering and management or software engineering.

Limitation for students? (Yes, number, priorities/Leave empty):

Yes, 35. Only for Master's level students

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No

CS31A0720: Basics of ERP systems, 6 cr

Validity: 01.08.2017 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Lasse Metso

Note:

Students need own computers (Windows) to which SAP client is installed.

Year:

M.Sc. (Tech.) 1 or 2

Period:

3-4

Teaching Language:

English

Teacher(s) in Charge:

Junior Researcher Lasse Metso, M.Sc. (Tech.)

Aims:

After completing the course students will be able to:
- evaluate the benefits of ERP system
- develop and modify master data to ERP system
- support business processes by use of ERP system

Contents:

Theory of ERP systems and security of ERP systems.
SAP business processes:

Logistics
- Purchasing

- Inventory Management
- Warehouse Management
- Production Contro
- Sales and Distribution
- Plant maintenance
- Project Management

Accounting
- Financial Accounting
- Controlling

Human Capital Management

Teaching Methods:

This course is using distance education methods. All material will be in Moodle or links in Moodle. Students can participate regardless of time and place. SAP client implementation and definition of needed connections (12 h), SAP assignment (90 h) and learning diary (54 h). Total workload 156 h.

Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

SAP assignments 60 % and learning diary 40 %.

Course Materials:

Materials used in this course are mainly based on SAP UCC material which are given to students and scientific articles (defined during course).

Places for exchange-students? (Yes, number/No):

max 10

Places for Open University Students?(Yes, number/No):

max 5

CS30A1372: Creative Design and Problem Solving, 6 cr

Validity: 01.08.2016 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Andrzej Kraslawski

Year:
M.Sc. (Tech.) 1
Period:
1-2
Teaching Language:
English
Teacher(s) in Charge:
Professor, Ph.D. Andrzej Kraslawski
Aims:

Learning outcomes: After fulfilling all requirements of the course, the students will be able to: 1. Understand the principles of creative problem solving 2. Know the basic methods of creative design 3. Work in team during the design process 4. Apply methods of creative design to products, processes, services and business methods

Contents:

The major subjects of the course are: Major Steps in Problem Solving Types of Problems Types of Design Concept of Creativity Survey of Intuitive and Structured Methods of Creativity Enhancement Types of Brainstorming Check lists Morphological analysis Synectics Case-based Reasoning Graphical Methods Evaluation of Ideas

Teaching Methods:

The course is organised as a combination of regular lectures and interactive problem-solving sessions and project works. The in-class problem-solving sessions will be based on the team work realised by the groups of 3-5 students. The 3-4 project works will be realised by the groups of 3-4 students during the out-of-class activities and it will be finished with the preparation of the project report. In-class teaching and problem-solving sessions 42 h, project works 88 h. Total workload 130 h.

Lectures, in class activity, period 1.
Project work, out-of - class activity, period 2.
Project work 88 hours

Suitability for doctoral studies (Yes/Leave empty):

Yes

Doctoral School course where enrollment is in WebOodi (Yes/Leave empty):

Yes

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Final grade 0-5. Evaluation: Generated solutions of the in class problems 40 %, project reports 30 %, written exam 30%. Obligatory presence during 80% of in-class activities.

Course Materials:

Course slides.

Tony Proctor
Creative problem solving for managers
Routledge, 3rd edition, 2009

H. Scott Fogler and Steven E. LeBlanc
Strategies for Creative Problem Solving
Prentice Hall, 3rd edition , 2013

David Silverstein, Philip Samuel, Neil DeCarlo
The Innovator's Toolkit: 50+ Techniques for Predictable and Sustainable Organic Growth
Wiley, 2009

Alexander Osterwalder and Yves Pigneur
Business Model Generation
Osterwalder and Pigneur, 2010

Prerequisites:

Basic courses of management. Basic knowledge of engineering disciplines (e.g. process or mechanical engineering).

Limitation for students? (Yes, number, priorities/Leave empty):

Yes, 80

Places for exchange-students? (Yes, number/No):

15–

Places for Open University Students?(Yes, number/No):

max 5

CS30A1655: Advanced Course in Strategic Management, 6 cr

Validity: 01.08.2016 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Samuli Kortelainen

Note:

The student who has completed the course CS30A1684SS Advanced Course in Strategic Management can not include this course into the LUT degree.

Year:

M.Sc. (Tech) 2

Period:

3-4

Teaching Language:

English

Teacher(s) in Charge:

Post-Doctoral Researcher, D.Sc. (Tech.) Samuli Kortelainen

Aims:

Strategic management literature is a widely research topic, that has lead to a wide and many times confusing and even contradictory literature. In order to fully understand the current state of literature, the lens needs to be first turned to the history of different strategic schools. Therefore, the course starts from the roots of strategy management and then builds a comprehensive view to the current status of strategic management literature. After the successful completion of course the student has:
1. Comprehensive picture of the current state of strategic management theory o Understanding reasoning behind different strategic management theories
2. Understanding on the limitations and restrictions in current strategic management theory and their practical implications
3. Holistic view to current new themes linking strategic management theories to other industrial management disciplines

Contents:

1. Main schools of strategic management The course begins on looking at the development history of main strategic management schools, where the goal is to identify similarities and differences between different literature streams.
2. The challenges and criticism of current strategic management theories Although strategic management theories are widely applied, they are also subjected to wide range of criticism. The second part of lectures focuses on these critical aspects of strategic management.
3. Current development paths of strategic management theory Third part focuses on the various detailed development steps in strategic management literature to counter or point critical points in original theories.

Teaching Methods:

Lectures 18 h, in-class room exercises 10 h, seminarwork and presentation 50 h, preparation to exam 50 h. Total 128 h. Individual 24 h exam.

Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

Yes

Assessment:

0 - 5. Exam 50 %, exercise 50 %.

Places for exchange-students? (Yes, number/No):

Yes, 10

Places for Open University Students?(Yes, number/No):

This course has 1-5 places for open university students. More information on the web site for open university instructions.

CT70A4000: Business Process Modelling, 6 cr

Validity: 01.01.2018 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Ajantha Dahanayake

Year:

M.Sc. (Tech.) 1

Period:

1-2

Teaching Language:

English

Teacher(s) in Charge:

Professor, PhD Ajantha Dahanayake

Aims:

1. Identify the principles of a business process modelling language and the dimensions of quality in a process model
2. Apply the process of process modelling ("method") and the social aspects of process modelling
3. Use the modelling language to express and abstract from a realistic business process
4. Apply a method for modelling business processes in all its stages
5. Evaluate the model and the modelling process as a social process
6. Investigate a business and research question related to business process modeling

Contents:

Introduction of the concept and relevance of a business process, role modeling, dimensions of model quality and measurement, BPM and modeling methods, application to business process modeling and digital transformation, research issues.

Teaching Methods:

Lectures 14 h, homework work 20 h, 1. period.
Lectures 14 h, homework 20 h, 2. period.

Reading assignments, 2 hands on team project assignments 88 h. Total 156 h.

Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

0-5. continuous evaluation.
Assessments 50%, Project 50%

Course Materials:

- Silver, Bruce: BPMN Method and Style, 2nd Edition, with BPMN Implementer's Guide: A structured approach for business process modelling and implementation using BPMN 2.0. Cody-Cassidy Press, 2011
- Weske, Mathias: Business Process Management: Concepts, Languages, Architectures. Springer, 2007

Places for exchange-students? (Yes, number/No):

max 5

Places for Open University Students?(Yes, number/No):

No

KaMsfSs: Specialisation Studies, 36 cr

Validity: 01.08.2014 -
Form of study: Major studies
Type: Study module
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F

No course descriptions.

Obligatory Specialisation Studies

A210A0350: Real Options and Managerial Decision Making, 6 cr

Validity: 01.08.2011 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Azzurra Morreale, Mariia Kozlova, Mikael Collan

Year:

M.Sc. (Econ. & Bus. Adm.) 2

Period:

3 (intensive week 9)

Teaching Language:

English

Teacher(s) in Charge:

Professor, D.Sc. (Econ. & Bus. Adm.) Mikael Collan
Post-doc researcher D.Eng. Azzurra Morreale
Post-doc researcher, D.Sc. (Econ. & Bus. Adm.) Mariia Kozlova

Aims:

The aim of the course is to give students know-how about how to use the real options approach as a part of decision making in companies and how to apply real options thinking in valuation and analysis in the presence of uncertainty. After the course the students:
- know the mathematical foundations of real options and the connections between the real options approach and financial theory
- know the research tradition of real options and are able to evaluate the limits of the approach
- understand and analyze the role of uncertainty and risk in decision making
- apply the real options approach in managerial decision situations, where suitable
- know the main model types used in real option valuation
- ability to perform real option valuation with the fuzzy pay-off method or with Monte Carlo Simulation and to construct a tool for RO valuation with one of these methods

Contents:

Core content: real options vs. financial options, modeling the real options and the limits of modeling, the usability of real options in strategic decision making
Additional content :the use of mathematical tools applied in the real options context
Special content: how to use the real options approach in managerial decision making situations exemplified by means of different real cases, project of constructing a simple real option valuation tool with excel or with matlab

Teaching Methods:

Lectures and exercises 18 h, independent reading assignments (articles) and preparation for lectures 46h. Written exam and preparation for the exam 93 h. Peer project evaluation 2h. Total workload for the student 160 h. Extra curricular project.

Suitability for doctoral studies (Yes/Leave empty):

Yes

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Grade 0-5, evaluation 0-100 points, written exam 80%, course project 20%,

Course Materials:

Collan, M., 2012, The Pay-Off Method: Re-Inventing Investment Analysis – With numerical application examples from different industries, CreateSpace, Charleston, SC, USA (ISBN 978-14-782-3842-3) Lecture slides, Assigned reading, collection of articles. Materials will be available in Moodle (except for the course book)

Prerequisites:

For master´s program students only

Limitation for students? (Yes, number, priorities/Leave empty):

Yes. 100, priority for MSF and MBAN students.

Places for exchange-students? (Yes, number/No):

15–

Places for Open University Students?(Yes, number/No):

No

A220A9001: Master's Thesis, Strategic Finance, 30 cr

Validity: 01.01.2018 -
Form of study: Major studies
Type: Course
Unit: LUT School of Business and Management
Teachers: Sheraz Ahmed, Azzurra Morreale, Mariia Kozlova, Mikael Collan, Eero Pätäri, Jyrki Savolainen

Year:

M.Sc. (Econ. & Bus. Adm.) 2

Period:

1-2, 3-4

Teaching Language:

English

Teacher(s) in Charge:

Professor D.Sc. (Econ. and Bus. Adm.) Mikael Collan, Professor D.Sc. (Econ. and Bus. Adm.) Eero Pätäri, Associate Professor D.Sc. (Econ. and Bus. Adm.) Sheraz Ahmed, Research Fellow Jan Stoklasa, Research Fellow Azzurra Morreale, Post-Doc Researcher Jyrki Savolainen, Post-Doc Researcher Mariia Kozlova

Aims:

Upon completion of the thesis, students will be able to delimit and define the purpose and the topic of the research. They know the theory and research methods relevant to their main subject.
They understand the importance of theoretical framework in own research and in solving empirical research problems. Students are able to justify and explain the main points of the research both in oral presentation and in written format. They can assess, evaluate and analyze reports written by other students and defense his/her own choices relating to the research in the seminar sessions. Students can collect and choose relevant literature based on critical evaluation. They demonstrate the ability to compare and combine information based on literature and empirical material.

Contents:

The students familiarize themselves with the structure of Master's thesis and the standards related to the thesis, and plan their own thesis work. The students prepare and present the analysis of the research topic, prepare and present the research plan in the seminar sessions, draw up and present the intermediate version of the thesis (60-70% completed, includes introduction, literature review, research design and preliminary findings), act as a discussant of another student's interim report.

Teaching Methods:

Seminar work on 1.-4. periods. New seminar groups start in the beginning of the 1st and 3rd periods. Active participation in research seminars, presentation of the research plan and interim report, acting as discussants for other's interim report, writing of the thesis and completing the final version of the Thesis under supervision of assigned Master's Thesis supervisors. Total workload consisting of research seminars, seminar assignments, research execution and written reporting 800 h.

Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Course Materials:

Master's Thesis instructions and seminar materials available in Moodle and Uni portals.

Prerequisites:

Thesis project idea that has been preliminary approved by the thesis supervisor (submitted in Moodle). Approximately 30 ECTS cr. MSF studies.

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No

KaSOMAnFi: Analytics for Finance, 25 - 35 cr

Validity: 01.08.2017 -
Form of study:
Type: Study module
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F

No course descriptions.

Obligatory studies 22 ECTS cr

A210A0601: Information Systems in Corporate Management and Decision-making, 6 cr

Validity: 01.08.2014 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Mikael Collan

Note:
Weekly quizzes that will be open for three days each week.
Year:
M.Sc. (Econ. & Bus. Adm.) 1
Period:
2
Teaching Language:
English
Teacher(s) in Charge:
professor, D.Sc. (Econ. & Bus. Adm.) Mikael Collan
Aims:
The aim of the course is to give extensive general knowledge about corporate information systems and how they are used in corporate decision-making, business control, and as a driver of business development. After the course the students: have an understanding of the corporate information systems stack and the most common types of corporate information systems and where they are used, are able to view a business as a system and its parts as parts of a system, know how information systems can collect, summarize, and analyze corporate information, understand what the practice of fact based management is based on and how it is connected to information systems, know the concept of intelligent systems, know selected methods and tools, understand the types of results that they can provide, and the importance of such results for, for example, making the business more effective through optimization, can identify situations where information systems can be used to develop business practices

Contents:

Core content: corporate information stack, business intelligence
Additional content : controlling in a modern corporation based on IS, intelligent systems in business process development, concepts of optimization, machine learning, neural networks, simulation, and fuzzy logic
Special content: importance of visualizing knowledge

Teaching Methods:

Lectures 20 h, independent reading assignments (articles), essay writing, and preparation for lectures 53h. Peer essay evaluation 2h, Quizzes, written exam and preparation for the quizzes and the exam 85 h. Total workload for the student 160 h.

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Grade 0-5, evaluation 0-100 points, Quizzes 40%, Essay 20%, Written exam 40%.

Course Materials:

Lecture slides, lecture videos, assigned video material, assigned reading, collection of articles. All materials will be available via Moodle.

Prerequisites:

For master´s level students only

Places for exchange-students? (Yes, number/No):

15–

Places for Open University Students?(Yes, number/No):

max 5

A220A0053: Investment and Business Analysis with Excel, 6 cr

Validity: 01.01.2018 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Mariia Kozlova, Azzurra Morreale

Note:

The course requires practicing Excel and self-study on top of the exercises and lectures. If the course enrollment is more than the course maximum, then students are accepted in the following order: students from MSF and MBAN programmes, other master's programme students, other students.

Year:

M.Sc. (Econ. & Bus. Adm.) 1

Period:

3

Teaching Language:

English

Teacher(s) in Charge:

D.Sc. (Econ. & Bus. Adm.), Post-doc researcher Mariia Kozlova
D.Sc. (Eng.), Post-doc researcher Azzurra Morreale

Aims:

After the course the students:
- are able to prepare and handle data ina spreadsheet environment performing tasks such as data classification and ordering
- are able to plan and perform various business and finance related analyses
- know how to create simple models for optimization and to perform statistical analyses on data.

Contents:

Planning and performing various analyses relevant to business and corporate finance, simple optimization and statistical analyses, importing data into the spreadsheet from other software, creating graphics for reporting results.

Teaching Methods:

Seminars 10 h, preparing for the course with reading and video materials 20 h, independent exercise work 70 h, course project 50h, peer to peer evaluation 10 h. Total workload for the student 160h. Moodle is used in this course.

Examination in Moodle (Yes/No):

Yes.

Examination in Exam (Yes/No):

No

Assessment:

Grade pass-fail, evaluation 0-100 points, exercises 70%, course project 30%.

Course Materials:

Lecture materials, video materials, assigned reading Beginning Excel What-If Data AnalysisTools: Getting Started with Goal Seek, Data Tables, Scenarios, and Solver, PaulCornell, 2006, Apress - available as an eBook in the library database.

Prerequisites:

Lecture materials, video materials, assigned reading Beginning Excel What-If Data AnalysisTools: Getting Started with Goal Seek, Data Tables, Scenarios, and Solver, PaulCornell, 2006, Apress - available as an eBook in the library database.

Limitation for students? (Yes, number, priorities/Leave empty):

Yes, max 200 students. Order of priority: students from MSF and MBAN programmes, other master's programme students, other students.

Number of exercise groups where enrollment is in WebOodi (Number/Leave empty):

4

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No

A220A0752: Analytics for Business, 6 cr

Validity: 01.01.2017 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Azzurra Morreale

Year:

M.Sc. (Econ. & Bus. Adm.) 1-2

Period:

4

Teaching Language:

English

Teacher(s) in Charge:

Post- doctoral researcher, Azzurra Morreale

Aims:

This course enables to learn a significant understanding of data science: the fundamental concepts and principles that underlie techniques for extracting useful knowledge from data. These concepts underlie the analysis of data-centered business problems, the creation and evaluation of data science solutions, and the evaluation of general data science strategies, and proposals. Through several practical examples, at the end of the course the student will acquire a broad range of techniques and practical skills to independently plan and create analysis tools able to finding anomalies, patterns and correlations within large data sets to predict outcomes. Students will be also able to put some models and analysis methods into use with MATLAB and EXCEL.

Contents:

Core content: Data understanding and data preparation, supervised learning (decision-trees, linear regressions, logistic regression, super vector machine), unsupervised learning (clustering methods)
Additional content: neural networks (self-organizing map)
Special content: Performance measure and overfitting: (Roc curve, area under Roc (Auc), confusion matrix, cross-validation)

Teaching Methods:

Lectures and exercises 35 h, reading materials and preparation for the exam (75 h). Course work (50 h). Total workload for the student 160 h.

Examination in Examination schedule (Yes/No):

No

Examination in Moodle (Yes/No):

Yes

Examination in Exam (Yes/No):

No

Assessment:

During the course the will be several single assignments (50%), where the illustrated methods are applied to new data and a group assignment (50%), where in a seminal paper, at the end of the course, the group will work on a real case study.

Course Materials:

Lecture materials, Assigned reading, Course book
Data Science for Business : What you need to know about data mining and data-analytic thinking, by Foster Provost, Tom Fawcett, 2013- available as an eBook in the library database
Moro S., Cortez. P. and Rita P. (2014). A Data-Driven Approach to Predict the Success of Bank Telemarketing. Decision Support System, 22-31.
Collan M., Ekulnd T., Back. (2007). Using the Self-Organizing Map to Visualize and Explore Socio-Economic Development. EBS Review.
Huysmans J, Baesens B, Vanthienen J, van Gestel T (2006). Failure prediction with self organizing maps. Exp Syst Appl 30:479–487

Prerequisites:

Principles of technical computing course (BM20A5001) or the same in Finnish. is required. Only for master degree students.

Places for exchange-students? (Yes, number/No):

15–

Places for Open University Students?(Yes, number/No):

No

BM20A5001: Principles of Technical Computing, 4 cr

Validity: 01.08.2014 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Engineering Science
Grading: Study modules 0-5,P/F
Teachers: Matylda Jablonska-Sabuka

Year:

B.Sc. (Tech.) 2., M.Sc. (Tech.) 1
Period:

1
Teaching Language:

English
Teacher(s) in Charge:

D.Sc. (Tech.) Matylda Jablonska-Sabuka
Aims:

Students get a good understanding of Matlab syntax and programming, gain fluency in principles of technical computing and are able to apply the skills to basic mathematical and engineering problems (the skills are applicable in big part to Octave and R programming, too).
Contents:

Working with various data structures (multidimensional arrays, cell arrays, etc.) and variable types (numeric, logical, textual, etc.), Matlab symbolic functionality, conditional statements (if-else, switch-case), loops (for and while), using built-in functions, handling external data, 2-D and 3-D plotting, writing user-defined functions, optimization of code speed, style and efficiency.
Teaching Methods:

Lectures 12 h, computer class exercises 24 h, independent study 30 h, preparation for exam 34 h, 1st period. Total 100 h. EXAM-tentti.
Examination in Examination schedule (Yes/No):

No
Examination in Moodle (Yes/No):

No
Examination in Exam (Yes/No):

Yes
Assessment:

0-5, examination 100 %.
Course Materials:

Lecture material available in Moodle, based partly on textbook: Gilat, A.: An Introduction to Matlab with Applications.

Prerequisites:

Basic university calculus required. Recommended first year university calculus necessarily including matrix calculus.

Places for exchange-students? (Yes, number/No):

max 10

Places for Open University Students?(Yes, number/No):

max 5

Elective Studies, min 12 cr

A220A0550: Advanced Decision-making, 6 cr

Validity: 01.08.2014 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Jan Stoklasa

Note:

If the course enrollment is more than the course maximum, then students are accepted in the following order: students from the MBAN and MSF programmes, other master´s programme students, other students.

Year:

M.Sc. (Econ. & Bus. Adm.) 2

Period:

3

Teaching Language:

English

Teacher(s) in Charge:

D.Sc. (Tech.) Jan Stoklasa

Aims:

The students learn principles of some modern methods for multiple criteria decision-making, decision analysis, and about systems for supporting decision-making. Students learn about the history of decision-support and operational research and understand that there is a constant evolution in decision support methods. Students are able to understand the benefits of modern decision-support methods in real world business situations. Students can put some models and analysis methods into use with MATLAB or Excel, where applicable and solve real-life decision-making problems using the methods.

Contents:

Core content: This course covers the main topics of multiple criteria decision making under certainty, uncertainty and risk. The topics discussed during the course therefore include: principles of decision making under certainty, uncertainty, risk and ignorance, multiple criteria decision-making (MCDM) and evaluation methods (TOPSIS, AHP), the use evaluations of absolute and relative type, efficiency assessment models (DEA), game theory (non-cooperative games of two players, cooperative games of two players with/without transferable gains, games against nature), validation of decision support systems and models and sensitivity analysis. MATLAB and Excel are used to build the models and solve assignments, to showcase the practical application of the presented methods. Additional content: The history of operational research is summarized. Additionally, fuzzy logic in decision-making is also

covered, along with topics such as decision-support systems (DSS), expert systems and optimization. Special content: The course also introduces students to the basics of multiple expert decision-making and reaching consensus, Delphi method.

Teaching Methods:

Lectures and exercises approximately 24 h, reading materials and preparation for the lectures (60 h) & the exam (76 h). Course work, which will reduce the number of hours needed for lecture & test preparation. Total workload for the student 160 h.

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Grade 0-5, based on a written exam. Bonus points can be awarded for homework assignments.

Course Materials:

Lecture materials, Assigned reading and assigned course books MATLAB / Octavia materials available on the mathworks www-site Mengov, G.: Decision Science: A Human-Oriented Perspective, Springer, 2015. Srinivasan, R.: Strategic Business Decisions - A Quantitative Approach, Springer, 2014. San Cristóbal, J. R.: Multi Criteria Analysis in the Renewable Energy Industry, Springer, 2012.

Prerequisites:

Required: BM20A4301 Johdatus tekniseen laskentaan or BM20A5001 Principles of technical computing Suggested: Information Systems in Corporate Management and Decision-Making

Limitation for students? (Yes, number, priorities/Leave empty):

Yes, 80. If the course enrollment is more than the course maximum, then students are accepted in the following order: students from the MBAN and MSF programmes, other master´s programme students, other students.

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No

BM20A6500: Simulation and System Dynamics, 6 cr

Validity: 01.08.2017 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Engineering Science
Grading: Study modules 0-5,P/F
Teachers: Azzurra Morreale, Virpi Junttila

Year:
M.Sc. (Tech.) 1
Period:
2-3
Teaching Language:
English
Teacher(s) in Charge:

Post-Doctoral Researcher, D.Sc. (Tech.) Virpi Junttila
Post-Doctoral Researcher, Ph.D. Azzurra Morreale

Aims:

The course gives an introduction to the concepts of discrete and continuous simulation models and methods together with numerical examples. After the course, the student is able to create and use different simulation models to solve practical problems. Among the discrete-event based models, the student is able to model basic queuing, server, scheduling and storage size problems. Also, the student is able to create basic operations and model dynamic systems with Simulink and use Simulink to solve different simulation problems.

Contents:

Basic concepts of discrete and continuous systems. Model-based design, basic modeling work-flow, basic simulation work-flow, running the simulations and interpreting the results. Random numbers, discrete event generation by random numbers. Statistical and empirical distributions for event generation. Building numerical simulation examples with Matlab and Simulink. Modeling dynamics systems and simulation models for dynamic systems with Simulink.
Application examples: queuing systems, storage size optimization, profitability analysis, supply chain management, investment analysis

Teaching Methods:

Lectures 21 h, exercises 14 h, homework 21 h, 2nd period. Lectures 21 h, exercises 14 h, homework 21 h, 3rd period. Practical assignment 22 h, preparation for examination and the examination 22 h, 2nd-3rd period. Total 156 h.

Suitability for doctoral studies (Yes/Leave empty):

Yes

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

0-5, examination 80 %, homework and practical assignment 20 %.

Course Materials:

Course material is given in the course homepage.

Prerequisites:

Recommended BM20A1401 Tilastomatematiikka I and BM20A5001 Principles of Technical Computing.

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

max 15

CS38A0020: Optimization in business and industry, 6 cr

Validity: 01.08.2017 -
Form of study: Basic studies
Type: Course
Unit: LUT School of Business and Management
Grading: Study modules 0-5,P/F
Teachers: Sirkku Parviainen, Pasi Luukka

Year:

M.Sc. 1.

Period:

4

Teaching Language:

English

Teacher(s) in Charge:

Pasi Luukka, D.Sc. (Tech.), Associate Professor
Sirkku Parviainen, Lic.Phil., Lecturer

Aims:

By the end of the course student will be able to
- select/ employ mathematical models for various optimization problems
- use optimization software
- interpret information from optimization results
- understand the basic principles of different optimization algorithms for linear, mixed-integer linear, and nonlinear optimization

Contents:

Formulation of optimization models. Linear programming and mixed-integer linear programming, nonlinear optimization algorithms.
Solving optimization problems using Matlab Optimization Toolbox. Business and industry oriented practical examples, i.e. factory, warehouse, sales allocation models etc.

Teaching Methods:

Lectures 28 h, exercises 28 h, 4th period. Independent study 74 h, practical assignment 30 h. Written examination. Total work load 160 h.

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

0-5, examination 100 %

Course Materials:

Taha, H.A.: Operations Research an introduction, 8th edition, Pearson/Prentice-Hall, 2007.
Hillier, F.S., Lieberman, G.J.: Introduction to Operations Research, 8th edition, McGraw-Hill, 2004.

Prerequisites:

Experience in programming or using mathematical software required.
BM20A4301 Johdatus tekniseen laskentaan or BM20A5001 Principles of Technical Computing

Number of exercise groups where enrollment is in WebOodi (Number/Leave empty):

2

Places for exchange-students? (Yes, number/No):

Yes, max 15

Places for Open University Students?(Yes, number/No):

Yes, max 10

CS38A0040: Marketing analytics, 6 cr

Validity: 01.08.2017 -

Form of study: Basic studies

Type: Course

Unit: LUT School of Business and Management

Grading: Study modules 0-5,P/F

Teachers: Jyrki Savolainen

Note:

If the course enrollment is more than the course maximum, then students are accepted in the following order: students from MBAN programme, students from MIMM programme, other master's programme students, other students.

Year:

M.Sc. (Tech) 1

Period:

4

Teaching Language:

English

Teacher(s) in Charge:

Jyrki Savolainen, D.Sc.(Econ. & Bus. Adm.), Post-doc researcher

Aims:

The aim of the course is to offer extensive knowledge on the use of various analytical techniques in marketing. The students will be introduced to the process of decision support in marketing using analytics in various typical problems. Through several practical examples, the course aims to provide the tools that focus on data understanding and preprocessing, modelling choices and implementation until the interpretation, visualization and utilization of the analysis in various marketing-related problems. The course will provide hands-on lectures to using the various methodologies with the selected software environments. After the course the students: have an understanding of the process of performing marketing analytics, know how to collect, understand and preprocess data to be used in marketing problems, know the most important applications and can identify the appropriate tool for a specific problem, are capable of performing marketing analytics using software, understand the role of big data in marketing.

Contents:

Core content: role of data in modern marketing, traditional methods (clustering, forecasting, market-basket analysis), machine learning-based methods in marketing (recommendation systems, advertising on the web)
Additional content: social network analysis, sentiment analysis
Special content: use of the introduced methods with relevant software

Teaching Methods:

Lectures 20 h, computer room tutorials 10 hours, course assignments involving data analysis with software 75h. Written exam and preparation for the exam 55 h. Total workload for the student 160 h.

Examination in Examination schedule (Yes/No):

Yes

Examination in Moodle (Yes/No):

No

Examination in Exam (Yes/No):

No

Assessment:

Course assignments (70% of the grade), written examination (30% of the grade), grading 0-5.

Course Materials:

The course will largely be based on the free online book (http://www.mmds.org/)
Leskovec-Rajaraman-Ullman: Mining of Massive Datasets
Additional material will be distributed during the course via Moodle.

Prerequisites:

The course will use an analytics capable software (to be announced later; Matlab or R, perhaps even Excel) - the students are expected to know how to use the software. Basic knowledge in statistics.

Limitation for students? (Yes, number, priorities/Leave empty):

Yes. 50, priority to MBAN students (Masters program in business analytics), then students from MIMM programme, other master's programme students, other students.

Places for exchange-students? (Yes, number/No):

No

Places for Open University Students?(Yes, number/No):

No