

ANNEX 3a – Adjusted Syllabi and Assessment Percentages for Conventional

Course Title	Financial and Managerial Accounting				
Course Code	AEM600				
Course Type	Elective				
Level	Master (2 nd Cycle)				
Year / Semester	1 st Year / 1 st Semester				
Teacher's Name	Alexis Kythreotis/Marios Mavrides				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	<p>The aim of this course is to provide students with a better understanding of the environment in which accounting information is developed and used. Students through this course will be able to comprehend the objectives, functions, regulatory frameworks, and practices of financial reporting. Further, students will learn and apply the techniques and methods in the preparation and presentation of financial accounting reports in accordance with IFRSs. Moreover, an additional objective of this course is to facilitate students in developing and applying a comprehensive understanding of the role of management accounting information in business decision-making, especially the analysis of complex and unstructured decision situations in a strategic context. The module explores the role of management accounting information in supporting the strategic management processes in an organisation, including strategic cost management and strategic pricing. The module also addresses the design and application of costing systems (both traditional and innovative) in ways which recognise context-specific considerations of a technical, managerial, and cost-benefit nature</p>				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> • Apply the accounting concepts and techniques, and evaluate their impact on financial statement figures and presentation; • Prepare all financial statements in accordance with the International Financial Reporting Standards (IFRS). • Appraise the objectives of management accounting, its role as part of a business information system and its link to the strategy of the organisation. 				

	<ul style="list-style-type: none"> • Evaluate and apply appropriate techniques for decision-making to a wide range of management decision situations. • Discuss and evaluate the various pricing strategies which may be adopted by organizations and their effects including transfer pricing. • Utilize advanced techniques of standard costing including mix and yield, operational and planning and market share and size in order to provide detailed information for cost control. • Identify potential multi-dimensional performance measures appropriate to a variety of business situations and recommend methods of implementation. • Evaluate the usefulness of cost management techniques in furthering the strategy of the organization 		
Prerequisites	None	Co-requisites	None
Course Content	<p>An overview of the financial reporting process including the objectives of financial reporting.</p> <p>Review basic accounting concepts.</p> <p>Review the accounting cycle that involves analyzing, recording and summarizing an entity's transactions in the books and records of an organization.</p> <p>Prepare all financial statements according to IFRS.</p> <p>How Management Accounting Information Supports Decision Making</p> <p>The Balanced Scorecard and Strategy Map</p> <p>Decision Making with Committed and Flexible Resources. Choosing an Optimal Product Mix. Short Term Budgeting.</p> <p>Accumulating and Assigning Costs to Products</p> <p>Activity-Based Costing. Assigning Resource Costs To Activities. Activity Cost Drivers: Selection and Use. Cost Hierarchy (Unit, Batch, Product, and Customer-Sustaining).</p> <p>Financial Measures of Performance. Profit Centers/Transfer Pricing. Variance Analysis. Productivity Measures.</p> <p>Financial Measures of Performance: Investments and EVA.</p>		

	Cost-Based Decision Making. Activity Management and Process Improvement. Kaizen. Life Cycle Costing. Target Costing.		
	Behavioral and Organizational Issues in Management Accounting and Control Systems		
	Using Budgets for Planning and Coordination		
	Financial Control		
Teaching Methodology	Face-to-Face		
Bibliography	David Alexander, International financial reporting and analysis. Latest edition, Andover: Cengage Learning EMEA publications.		
	Antony, R.N. Hawkins, D.F. and Merchant, K.A. Accounting: Text and Cases, Latest Edition, McGraw Hill.		
	Lundholm, R. and Sloan, R. Equity Valuation & Analysis, Latest Edition.		
	Robert Kaplan and Anthony A. Atkinson, Advanced Management Accounting, latest edition, Pearson		
	Anthony A. Atkinson , Robert S. Kaplan , Ella Mae Matsumura and S. Mark Young, Management Accounting: Information for Decision-Making and Strategy Execution, latest edition, Pearson		
	Atrill, P & McLaney, E. , Management Accounting for Decision Makers, Latest edition Financial Times, Prentice Hall.		
	Colin Drury, Management and Cost Accounting, latest edition, Thomson Learning		
Assessment	Examinations	50%	
	Assignments	40%	
	Class Participation and Attendance	10%	
		100%	
Language	English		

Course Title	Fundamentals of Finance				
Course Code	AEM610				
Course Type	Compulsory				
Level	Master (2 nd Cycle)				
Year / Semester	1 st Year / 1 st Semester				
Teacher's Name	Simona Mihai/Loukia Evripidou				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	<p>The course provides students with the basic tools of Finance and their usefulness in decision making. The course aims to develop students' understanding of the basic principles of finance and a very good foundation on how businesses are organized, how they make decisions and how they finance their decisions. The objective of the course is to improve student's ability to use the tools of finance in the decision-making process.</p>				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> • Assess the implications of the general strategic objectives of the organisation for the finance function; • Critically assess the role of the organization's financial managers in realizing these strategic objectives. • Assess and critically evaluate the different sources of corporate finance (e.g. equity, debt, retained earnings etc.) and to debate the relative advantages and disadvantages of each source. • Assess how risk and the cost of capital affects investment appraisal, and test the effect of these factors on the value of a capital project. • Measure the cost of capital of the organization, and assess how this cost is influenced by taxation, "leverage" and other factors. • Assess the external and internal influences on a corporation's capital structure, payout policy and policy in respect of risk management (via insurance, derivatives, and other instruments). • Critically evaluate the relationship among corporation's capital structure, payout policy and risk policy and their impact upon investment decisions. 				
Prerequisites	None		Co-requisites	None	

Course Content	<p>Key Concepts of Corporate Finance</p> <p>Valuation and Capital Budgeting Discounted Cash Flow Valuation; Net Present Value and Other Investment Rules ; Making Capital Investment Decisions; Risk Analysis, Real Options, and Capital Budgeting; Interest Rates and Bond Valuation; Stock Valuation;</p> <p>Risk Lessons from Market History; Return, Risk, and the Capital Asset Pricing Model (CAPM); An Alternative View of Risk and Return: The Arbitrage Pricing Theory Cost of Capital and Valuation;</p> <p>Capital Structure and Dividend Policy Efficient Capital Markets and Behavioral Challenges Long-Term Financing; Capital Structure: Basic Concepts; Capital Structure: Limits to the Use of Debt; Valuation and Capital Budgeting for the Levered Firm; Dividends and Other Payouts;</p> <p>Long-Term Financing Raising Capital; Leasing;</p> <p>Financial Derivatives Forwards, Futures, Options, and Swaps; Financial Derivatives: Extensions and Applications Warrants and Convertibles; Derivatives and Hedging Risk; Black-Scholes model; Risk-Neutral Pricing;</p> <p>Short-Term Finance Short-Term Finance and Planning; Cash Management; Credit and Inventory Management;</p> <p>Special Topics Stock Market Dynamics (SDEs, Geometric Brownian Motion, Gaussian Process;</p>
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	Mergers, Acquisitions, and Divestitures; Financial Distress; International Corporate Finance; Corporate Governance;		
Teaching Methodology	Face-to-face		
Bibliography	Jaffe, J. Westerfield, R. and Ross, S. Corporate Finance. McGraw-Hill Education. Latest edition. Bodie, Z. Kane, A. and Marcus, A. ISE Investments. McGraw-Hill Education. Latest Edition. Keith, C. Investments. John Wiley. Latest Edition. Elton, E., et al. Modern portfolio theory and investment analysis. John Wiley. Latest edition. Jonathan, B. Corporate finance. Pearson. Latest Edition.		
Assessment	Examinations	50%	
	Assignments	40%	
	Class Participation and Attendance	10%	
		100%	
Language	English		

Course Title	Principles of programming for R.				
Course Code	AEM625				
Course Type	Elective				
Level	Master (2 nd Cycle)				
Year / Semester	1 st Year / 1 st Semester				
Teacher's Name	Dr. Andreas Papayiannis				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	The course aims to Introduce students to the main key principles in programming for data analysis, and it specifically focuses on R programming.				
Learning Outcomes	<p>Upon successful completion of this course student will be able to:</p> <ul style="list-style-type: none">• Explain and use basic concepts in R programming;• Construct and execute basic programs in R;• Design and implement basic algorithms in R;• Use external libraries with R;• Use R for statistical calculations;• Use R to download financial data from web sources;• Graphically visualise data and results of statistical calculations;				
Prerequisites	None		Co-requisites	None	
Course Content	<p>General introduction to programming and students will learn and practice programming concepts along with tackling practical issues in statistical computing in R.</p> <ul style="list-style-type: none">• Programming in R<ul style="list-style-type: none">➤ Review of the main packages and key points in R➤ Reading and writing efficient code in R➤ Plotting and Data Visualization➤ Data Transformation techniques➤ String manipulation techniques➤ Dates, Times and advanced Data Structures➤ Extracting financial data from the web				

	<ul style="list-style-type: none">• Introduction to basic statistical applications with practical examples in R<ul style="list-style-type: none">➤ Descriptive statistics➤ Simulations and random numbers➤ Probability and the Normal Distribution➤ Sampling Distributions and Confidence Intervals		
Teaching Methodology	Face-to-Face		
Bibliography	<ol style="list-style-type: none">1. R for Everyone, J.Lander , 2nd Edition, Addison Wesley Data and Analytics2. The Book of R: A First Course in Programming and Statistics, Davies T. M., No Starch Press3. R for Data Science: Import, Tidy, Transform, Visualise and Model Data, H. Wickham and G. Grolemund, O'Reilly		
Assessment	Examinations	50%	
	Self-Assignments	10%	
	Group Project	40%	
		100%	
Language	English		

Course Title	Principles of programming for Python				
Course Code	AEM620				
Course Type	Elective				
Level	Master (2 nd Cycle)				
Year / Semester	1 st Year / 1 st Semester				
Teacher's Name	Dr. Andreas Papayiannis				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	The course aims to Introduce students to the key theoretical concepts of the computer science discipline from theoretical concepts and areas of study to the role of computer scientists in today's society. The course specifically focuses on Python programming.				
Learning Outcomes	<p>Upon successful completion of this course student will be able to:</p> <ul style="list-style-type: none">• Critically assess the key theoretical concepts of the Computer Science discipline;• Argue about the role and ethical responsibility of Computer Scientists in our society;• Explain and use basic concepts in programming;• Construct and execute basic programs in Python;• Design and implement basic algorithms in Python;• Use external libraries with Python;• Use Python to download financial data from web sources;• Graphically visualise data and results of statistical calculations;				
Prerequisites	None		Co-requisites	None	
Course Content	<p>Key theoretical concepts of the computer science discipline. General introduction to programming and students will learn and practice programming concepts along with tackling practical issues in statistical computing in Python.</p> <ul style="list-style-type: none">• Programming in Python<ul style="list-style-type: none">➤ Review of the main packages and key points in Python➤ Reading and writing efficient code in Python				

	<ul style="list-style-type: none">➤ Basic Plotting and visualization➤ The NumPy and Pandas Libraries <ul style="list-style-type: none">• Introduction to basic statistical applications with practical examples in Python<ul style="list-style-type: none">➤ Descriptive statistics➤ Simulations and random numbers➤ Extracting financial data from the web		
Teaching Methodology	Face-to-Face		
Bibliography	<ol style="list-style-type: none">1. Deitel and Deitel: Intro to Python for Computer Science and Data Science, Learning to Program With AI, Big Data and the Cloud. Latest Edition. Pearson.2. Python for Data Analysis, W. McKinney, First Edition, O’ Reilly		
Assessment	Examinations	50%	
	Self-Assignments	10%	
	Group Project	40%	
		100%	
Language	English		

Course Title	Advanced International Financial Reporting				
Course Code	AEM630				
Course Type	Compulsory				
Level	Master (2 nd Cycle)				
Year / Semester	1 st Year / 2 nd Semester				
Teacher's Name	Alexis Kythreotis/Marios Mavrides				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	The objective of this course is to develop knowledge and skills in understanding and applying accounting standards in the preparation of financial statements of business combinations, and analyzing and interpreting those financial statements.				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none">• Critically evaluate why firms engage in business combinations and know how to account for such combinations;• Assess the conditions required for an undertaking to be a subsidiary or an associate of a group;• Prepare consolidated financial statements;• Analyze, interpret and report on financial statements (including cash flow statements) and related information to address users' and stakeholders' needs;• Assess the limitations on the usefulness of corporate reports as an effective means of communication, including quality of disclosure and issues of creative accounting;• Critically evaluate the usefulness of accounting information in the decision making process;• Evaluate the accounting policies and governance structure adopted by companies as well as the reporting regulations, such IFRS, and their impact on the quality of earnings.				
Prerequisites	AEM600		Co-requisites	None	
Course Content	<p>The concept and principles of a group.</p> <p>Describe the concept of a group as a single economic unit; explain and apply the definition of a subsidiary within relevant accounting standards; describe why directors may not wish to consolidate a</p>				

	<p>subsidiary and the circumstances where this is permitted; explain the need for using coterminous year ends and uniform accounting policies when preparing consolidated financial statements; explain why it is necessary to eliminate intra-group transactions.</p> <p>The concept of consolidated financial statements.</p> <p>Explain the objective of consolidated financial statements; indicate the effect that the related party relationship between a parent and subsidiary may have on the subsidiary's entity statements and the consolidated financial statements; describe and apply the required accounting treatment of consolidated goodwill</p> <p>Preparation of consolidated financial statements including an associate.</p> <p>Prepare a consolidated statement of financial position for a simple group (parent and one subsidiary) dealing with pre and post-acquisition profits, minority interests and consolidated goodwill; Prepare a consolidated profit or loss and consolidated statement of comprehensive profit or loss for a simple group dealing with an acquisition in the period and minority interest; Explain and account for other reserves (e.g. share premium and revaluation reserves); Account for the effects in the financial statements of intra-group trading; account for the effects of fair value adjustments (including their effect on consolidated goodwill) to depreciating and non-depreciating non-current assets, inventory, monetary liabilities, assets and liabilities not included in the subsidiary's own statement of financial position, including contingent assets and liabilities; Account for goodwill impairment; Define an associate and explain the principles and reasoning for the use of equity accounting; Prepare consolidated financial statements to include a single subsidiary and an associate.</p> <p>Analyze and interpret Financial statements</p> <ol style="list-style-type: none"> Provides a framework for interpreting and forecasting a huge quantity of financial data in an organized and systematic manner. Cash Flow Analysis and describe how to use the information in the resulting cash flow statements to evaluate the cash consequences of the company's operating, investing and financing activities. Evaluate how well the accounting reflects the underlying economics of the business. Undress the limitations of financial statement information and provide guidelines for addressing these limitations.
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	Other Accounting and Audit Issues		
	<div>a. Non-recurring items, valuation of tangible and intangible assets.</div> <div>b. Equity method of accounting.</div> <div>c. Earnings Management and Quality of earnings.</div> <div>d. Significance and Implications of auditors' opinion for financial reporting.</div> <div>e. Financial Reporting and Analysis for Investment & Business Combinations.</div> <div>f. Financial reporting and analysis for marketable securities.</div> <div>g. Bankruptcy prediction.</div> <div>h. Related party transactions.</div> <div>i. Other information disclosed in annual report.</div>		
Teaching Methodology	Face-to-Face		
Bibliography	<div>David Alexander, International financial reporting and analysis. Latest edition, Andover: Cengage Learning EMEA publications.</div> <div>Elliott, B. and Elliott E, 'Financial Accounting, Reporting and Analysis, International Edition, Latest Edition. Prentice Hall London.</div> <div>Paul M. Collier, Accounting for Managers, Interpreting Accounting Information for Decision-Making, Latest edition, Wiley Publications.</div> <div>Antony, R.N. Hawkins, D.F. and Merchant, K.A. Accounting: Text and Cases, Latest Edition, McGraw Hill.</div> <div>Lundholm, R. and Sloan, R. Equity Valuation & Analysis, Latest Edition.</div>		
Assessment	Examinations	50%	
	Assignments	40%	
	Class Participation and Attendance	10%	
		100%	
Language	English		

Course Title	Quantitative Methods in Accounting and Finance				
Course Code	AEM640				
Course Type	Compulsory				
Level	Master (2 nd Cycle)				
Year / Semester	1 st Year / 1 st Semester				
Teacher's Name	Onisiforos Iordanou/Andri Konstantinidi				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	The purpose of this course is to increase students' statistic and econometric understanding. Students will learn how to collect data and apply various statistical techniques. Moreover, students will be in a position to understand and critically evaluate the results. Considerable attention is devoted to the applications of the concepts and techniques to accounting and finance.				
Learning Outcomes	Upon successful completion of this course students should be able to: <ul style="list-style-type: none">• Identify appropriate estimation methods in a variety of contexts and circumstances;• Discuss the adaptations and limitations of Statistics;• Explain and apply hypothesis tests;• Apply the concepts and methodologies to explain issues related to Accounting and Finance;• Interpret and critically appraise, quantitative statistics and econometric results;• Conduct basic statistics and econometric analysis using a computer software package;• Develop ability to resolve real world Accounting and Finance problems by applying the quantitative methods to data analysis.				
Prerequisites	AEM600, AEM610		Co-requisites	None	
Course Content	What is Statistics? Graphical Descriptive Techniques. Numerical Descriptive Techniques. Probability. Random variable and Discrete Probability Distributions.				

	Continuous Probability Distributions. Sampling Distributions. Introduction to Estimation. Introduction to Hypothesis Testing. Inference about a population. Inference about comparing two populations. Analysis of Variance. Simple Linear Regression and Correlation. Multiple Regression. Time series and panel data analysis		
Teaching Methodology	Face-to-face		
Bibliography	Keller, G and Warrack, B. Statistics for Management, Economics and Finance , Brooks/Cole Pub Co, last edition. Damodara, G.: Basic Econometrics, McGraw-Hill, Latest edition. Brooks. C.: Introductory econometrics for finance, Cambridge. Latest edition. Enders, W.: Applied Econometric Time Series, Wiley. Latest edition.		
Assessment	Examinations	50%	
	Assignments	40%	
	Class Participation and Attendance	10%	
		100%	
Language	English		

Course Title	Analytics in Accounting and Finance				
Course Code	AEM650				
Course Type	Compulsory				
Level	Master (2 nd Cycle)				
Year / Semester	1 st Year / 2 nd Semester				
Teacher's Name	Alexis Kythreotis/Ivi Stavrinides				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	<p>This course introduces students to the basic concepts, methods and approaches of data analytics in Accounting and Finance. The students will program and test business intelligence software, such as Google data studio or/and Tableau or/and Alteryx or/and Power BI. Through the software, the students will learn to prepare, clean, analyse and summarize the accounting and financial data and create visualizations. Moreover, students will be familiarized with relevant conceptual IT frameworks in order to evaluate the functionality and effectiveness of Accounting Information Systems (AIS), and to analyze the contemporary security and control aspects of such systems.</p>				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> • Collect (using EIKON database of Thomson Reuters / S&P Capital IQ Platform) , clean and transform accounting and financial data; • Summarize, visualize and present accounting and financial data; • Analyze accounting and financial data with basic analytical approaches; • Obtain the knowledge required to function as a systems accountant; • Evaluate and apply the knowledge of management support systems to accounting and related areas; • Analyse and critically evaluate the current development of enterprise-wide systems and their contribution to business process reengineering; • Apply and test well-known systems development methodologies for AIS implementations; 				

	<ul style="list-style-type: none"> • Program and test business intelligence software, such as Google data studio or/and Tableau or/and Alteryx or/and Power BI. • Critically evaluate the accounting controls and security measures in AIS. 		
Prerequisites	AEM600, AEM610, AEM620	Co-requisites	None
Course Content	<p>Basic Concepts and Methods of Data Analytics.</p> <p>Data preparation and cleaning; Data analytics approaches; Data visualization and summarization.</p> <p>Diagnostic, predictive and prescriptive analytics in managerial and financial accounting.</p> <p>Fundamental concepts of Accounting Information Systems (AIS)</p> <p>Contemporary Enterprise Resource Planning systems (ERP).</p> <p>AIS application to major transaction cycles. The Revenue Cycle. The Expenditure Cycle. The Financial Reporting Systems.</p> <p>Management decision support systems and Business Intelligence (BI)</p> <p>Contemporary systems development methodologies for AIS. Software development life cycle. Prototyping. End-user Development.</p> <p>Ethics, Fraud and IT controls.</p> <p>Hands-on EIKON database / S&P Capital IQ Platform.</p> <p>Hands-on visualisation software – Google data studio or/and Tableau or/and Alteryx or/and Power BI.</p>		
Teaching Methodology	Face-to-Face		
Bibliography	<p>Richardson, Teeter and Terrell. Data Analytics for Accounting, Latest Edition, McGraw-Hill.</p> <p>J.A. Hall, Accounting Information Systems, latest edition, Cengage Learning.</p>		

	J.A. Hall, Information Technology Auditing, latest edition, Cengage Learning. M.B. Romney and P.J. Steinbart, Accounting Information Systems, latest edition, Pearson. K.C. Laudon and J.P. Laudon, MIS: Managing the Digital Firm, Global Edition, latest edition, Pearson.		
Assessment	Examinations	50%	
	Assignments	40%	
	Class Participation and Attendance	10%	
		100%	
Language	English		

Course Title	Computational Finance				
Course Code	AEM660				
Course Type	Compulsory				
Level	Master (2 nd Cycle)				
Year / Semester	1 st Year / 2 nd Semester				
Teacher's Name	Andreas Papayiannis/Loukia Evripidou/Simona Mihai				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	Students through this course will be able to study the scientific computing and quantitative skills and apply those in pricing financial derivatives and will be familiarized with the new technological developments in this field. The course covers basic stochastic modeling with hands-on practice in R, in order to value different financial products using the Monte Carlo and Binomial Tree methods, perform variance reduction techniques and other advanced quantitative methods. Direct Market Access is introduced to students with the applications in electronic trading.				
Learning Outcomes	Upon successful completion of this course students should be able to: <ul style="list-style-type: none">• Manage basic scientific computing skills;• Simulate the financial products' dynamics and implementing pricing models of derivatives through Monte Carlo method and Binomial Trees;• Implement the computing tools to program• Manage the direct market access;• Understand, apply and critically evaluate the algorithmic trading systems and trading strategies;				
Prerequisites	AEM620, AEM640, AEM650		Co-requisites	None	
Course Content	<ul style="list-style-type: none">• Refresh on key statistical principles, and introduction to asset prices and stock price dynamics• Introduction to Monte Carlo method and simulations for<ul style="list-style-type: none">➤ generating random numbers,➤ pricing of European/Vanilla call/put options➤ pricing other path-dependent options				

	<ul style="list-style-type: none">➤ studying variance reduction techniques➤ performing advanced applications in higher dimensions and/or complicated option payoffs• Introduction to the Binomial Tree method for<ul style="list-style-type: none">➤ pricing European/Vanilla call/put options➤ applications to early-exercise options➤ hedging derivatives➤ performing advanced applications in higher dimensions and/or complicated option payoffs• Introduction to Direct Market Access is introduced to students with basic applications in electronic trading<ul style="list-style-type: none">➤ theory on orders and algorithms➤ Implementing trading strategies		
Teaching Methodology	Face-to-Face.		
Bibliography	Glasserman, P. Monte Carlo Methods in Financial Engineering, Latest Edition, Springer. Hull J. C. Options, Futures, and other derivatives, Eighth Edition, Prentice Hall. Ruppert D. and Matteson D. S. Statistics and Data Analysis for Financial Engineering with R examples, Second Edition, Springer. Johnson B. Algorithmic Trading and DMA: An introduction to direct access trading strategies, Latest Edition, 4Myeloma Press.		
Assessment	Examinations	50%	
	Self-Assignments	10%	
	Group Assignment	40%	
		100%	
Language	English		

Course Title	Applied Financial Analysis and Valuation				
Course Code	AEM670				
Course Type	Compulsory				
Level	Master (2 nd Cycle)				
Year / Semester	1 st Year / 2 nd Semester				
Teacher's Name	Simona Mihai/Loukia Evripidou				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	This course is designed to enable students to conduct financial analysis and valuation using computing and programming skills. Specifically, students will be able to analyse and evaluate companies through Financial Data Analysis Platforms, Microsoft Excel and Programming.				
Learning Outcomes	Upon successful completion of this course students should be able to: <ul style="list-style-type: none">• Develop the ability to gather and analyze financial reports with computing skills;• Apply analytical and computer skills to assess the values of businesses;• Provide an analysis of companies' fundamentals and conduct their valuation with efficient data analytical skills.				
Prerequisites	AEM600, AEM610, AEM620, AEM630, AEM640	Co-requisites	None		
Course Content	Business Strategy Analysis - Assessment of the profit potential of a firm at a qualitative level; the role of macroeconomic analysis; framework of industry and competitive analysis. Hands-on EIKON or/and S&P Capital IQ. Accounting and Financial Analysis - The use of computing technology to assess financial statements; Evaluation of a firm's performance in the context of its stated goals and strategy; Applications of frequently used tools such as ratio analysis, cash flow analysis, and common-base as well as common-size financial statements; Visualization of financial analysis. Hands-on EIKON or/and S&P Capital IQ and Microsoft Excel.				

	<p>Valuation Principles, Techniques and Practice - Common techniques (e.g. DCF, capitalization of dividends, asset-based valuation, WACC, CAPM) in valuing business.</p> <p>Hands-on programming with R.</p> <p>Business Ethics in the Digital Age - Ethical issues associated with data analytics and GDPR.</p>		
Teaching Methodology	Face-to-Face		
Bibliography	<p>Easton, McAnally, Sommers and Zhang. Financial Statement Analysis & Valuation". Latest Edition. Cambridge Business Publishers.</p> <p>David Alexander, International financial reporting and analysis. Latest edition, Andover: Cengage Learning EMEA publications.</p> <p>Antony, R.N. Hawkins, D.F. and Merchant, K.A. Accounting: Text and Cases, Latest Edition, McGraw Hill.</p> <p>Lundholm, R. and Sloan, R. Equity Valuation & Analysis, Latest Edition.</p> <p>Richardson, Teeter and Terrell. Data Analytics for Accounting, Latest Edition, McGraw-Hill.</p> <p>J.A. Hall, Accounting Information Systems, latest edition, Cengage Learning.</p> <p>M.B. Romney and P.J. Steinbart, Accounting Information Systems, latest edition, Pearson.</p> <p>Timothy R. Mayes. Financial Analysis with Microsoft Excel. Latest Edition. Cengage.</p>		
Assessment	Examinations	50%	
	Assignments	40%	
	Class Participation and Attendance	10%	
		100%	
Language	English		

Course Title	Principles of Machine Learning				
Course Code	AEM675				
Course Type	Elective				
Level	Master (2 nd cycle)				
Year / Semester	2 nd Year / 3 rd Semester				
Teacher's Name	Alberto Calzada				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	<p>The course introduces the fundamental concepts, theory, and algorithmic ideas of Machine Learning. It provides the student both with a foundation for either applying ML techniques on real-world problem or performing research on developing novel ML algorithms. It also forms a foundation for several other Data Science and AI courses, including advanced topics in ML, natural language processing, Big Data Analytics and others. Specifically, the course focuses on supervised classification techniques, basic and advanced classifiers (logistic regression, naïve Bayes classifier, K-nearest neighbors, support vector machines, decision trees, random forests), statistical hypothesis testing, metrics of performance (ROC curves and AUC), estimation of performance and tuning of hyper-parameters (cross-validation, nested cross validation, and bootstrap bias corrected CV), and feature selection (forward-backward search, lasso, orthogonal matching pursuit).</p>				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> • Define basic ML tasks and types of analysis, such as supervised learning, unsupervised learning, reinforcement learning, classification and regression, and feature selection. • Discuss the inner workings of standard ML classification and feature selection algorithms. • Illustrate how to solve the problem of selecting algorithms, tuning their hyper-parameters, and estimating the performance of the final predictive model. • Perform and apply ML pipelines to real-world problems, dealing with problems such as representing the problems as an ML task, representing appropriately the data, applying and tuning an ML pipeline, and interpreting results. • Define key statistical estimation and hypothesis testing concepts, with a focus on the ones that are routinely employed within ML algorithms. 				

	<ul style="list-style-type: none"> Have a solid, foundational basis to perform ML research and proceed with other courses that employ ML algorithms and concepts. 		
Prerequisites	None	Co-requisites	None
Course Content	<p>1) Introduction to ML, supervised, unsupervised, reinforcement learning, hypothesis (models) spaces, examples of ML applications</p> <p>2) Probability theory and concepts for ML, axioms of probability, conditional probability, Bayes theorem, maximum likelihood estimation, maximum a posteriori estimation</p> <p>3) Logistic Regression and fitting with gradient descent</p> <p>4) Hypothesis testing, and permutation-based hypothesis testing</p> <p>5) Naïve Bayes and K-Nearest Neighbors</p> <p>6) Decision Trees and Random Forests</p> <p>7) Metrics of performance, Receiver Operating Characteristic Curves (ROC), and Area Under the ROC curve</p> <p>8 and 9) Estimation of performance and hyper-parameter tuning using cross validation techniques</p> <p>10) Basics of optimization and constrained optimization</p> <p>11, 12) Support Vector Machines</p> <p>13) Basic Feature Selection</p> <p>All lectures will consist of a theoretical part presenting concepts and techniques and a practical part where the ML techniques will be applied for problem solving.</p>		
Teaching Methodology	Face to Face		
Bibliography	<p>Machine Learning, Tom Mitchell, McGraw Hill, Latest Edition</p> <p>Pattern Recognition and Machine Learning, Christopher Bishop, Springer, Latest Edition</p> <p>The Elements of Statistical Learning, Jerome H. Friedman, Robert Tibshirani, and Trevor Hastie, Latest Edition, Springer</p>		

	An Introduction to Statistical Learning, with Applications in R. Gareth James, Daniela Witten, Trevor Hastie and Robert Tibshirani, Springer, Latest Edition		
Assessment	Examinations	50%	
	Assignments	40%	
	Class Participation and Attendance	10%	
		100%	
Language	English		

Course Title	Principles of Artificial Intelligence				
Course Code	AEM680				
Course Type	Elective				
Level	Master (2 nd cycle)				
Year/Semester	2 nd Year/3 rd Semester				
Teacher's Name	Sotirios Batsakis				
ECTS	10	Lectures/week	3 Hours / 14 weeks	Laboratories/ week	None
Course Purpose and Objectives	This course introduces the fundamental concepts, theory, and algorithmic ideas of Artificial Intelligence (AI). Specifically, the course contains an introduction to agents, uninformed and heuristic search, logical agents, introduction to planning and constraint satisfaction, adversarial search for games, AI ethics and philosophical foundations.				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none">• Learn the basic concepts in Artificial Intelligence such as Agents problems, Actions and Environments.• Identify the type of problem and environment that an intelligent agent operates.• Represent the problem, constraints and goals with formal methods.• Apply search techniques including uninformed and heuristic search for problem solving.• Model and solve standard constraint satisfaction problems.• Identify optimal strategies in adversarial problem settings, such as games.• Recall and apply planning techniques for constructing effective plans for achieving an agent's goals.• Identify ethical issues involved in AI applications.• Apply related regulations when deploying AI applications.				
Prerequisites	None		Co-requisites	None	
Course Content	<p><u>Introduction:</u> Introduction to AI, definitions and history of AI.</p> <p><u>Intelligent Agents:</u> Problem formulation, goals, constraints environment and actors/agents.</p> <p><u>Search:</u> Solving problems by uninformed search.</p> <p><u>Informed Search:</u> Solving problems by searching using informed techniques involving heuristics.</p> <p><u>Beyond classical search:</u> local search algorithms, nondeterministic actions, partial observations, online search.</p>				

	<p><u>Game theory</u>: Selecting an optimal strategy in games using adversarial search techniques.</p> <p><u>Stochastic & Partially Observable Games</u>: Selecting an optimal strategy in games with non-deterministic actions and partial observability</p> <p><u>Constraint Satisfaction Problems</u>: Solving problems by finding acceptable solutions under constraints: Problem formulation and solving techniques.</p> <p><u>Planning</u>: Problem formulation construction of goal achieving plans: theory and practice.</p> <p><u>Planning and acting in the real world</u>: schedules and resources, hierarchical planning, nondeterministic domains, multi-agent planning.</p> <p><u>Philosophical foundations of AI</u>: Weak AI, strong AI, implications to dualism and consciousness.</p> <p><u>Ethics and AI</u>: Integrating ethics to AI systems, accountability and interpretability of AI systems (e.g. autonomous vehicles). Implications of AI in military applications. Automatic decision-making and algorithmic biases. Implications of AI in employment.</p> <p><u>Regulatory Framework of AI</u>: Existing regulatory frameworks and legal issues arising from AI applications.</p> <p>All lectures will consist of a theoretical part presenting concepts and techniques and a practical part where the AI techniques will be applied for problem solving.</p>		
Teaching Methodology	Face to Face		
Bibliography	<p>“Artificial Intelligence: A Modern Approach” (Latest Edition) by Stuart Russell and Peter Norvig.</p> <p>N. Bostrom and E. Yudkowsky, “The ethics of artificial intelligence”. In W. M. Ramsey and K. Frankish, editors, The Cambridge Handbook of Artificial Intelligence, pages 316-334, Cambridge University Press. Latest Edition.</p>		
Assessment	Examinations	50%	
	Assignments	40%	
	Class Participation and Attendance	10%	
		100%	
Language	English		

Course Title	Business and Finance in Blockchain				
Course Code	AEM685				
Course Type	Elective				
Level	Master				
Year / Semester	2 nd Year / 3 rd Semester				
Teacher's Name	Danny Lim				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	This programme provides knowledge and skills in business and finance, with a special emphasis on developing a business plan to establish a new venture or to introduce innovation (e.g. a new product/service/process/business/project development) in blockchain space. Hence, this program will be of value to future start-up (i.e. establishing a new enterprise) as well as corporate (i.e. introducing innovation in an existing organization) entrepreneurs. You will be trained to conduct research to evaluate customers, competitors, suppliers, and external and internal environments, as well as to co-create value with customers, and subsequently, to use the findings to develop a sound business plan highlighting a business concept, marketing plan, operational plan and financial plan				
Learning Outcomes	Upon successful completion of this course students should be able to: <ul style="list-style-type: none">• Recognize the difference between business and ideas.• Identify and explain various threat sources that may impact that the blockchain business and project.• Develop a viable and workable business plan for establishing a new business venture or introducing innovation in blockchain space• Discover and/or create opportunities to generate value to potential customers.• Conduct research necessary to gain in-depth knowledge required to develop a business plan.• Devise a marketing plan to generate value to customers.• Design a practical business operating plan• Develop a financial plan and token economy model.				
Prerequisites	None		Co-requisites	None	
Course Content	<ul style="list-style-type: none">• Business plan and data analysis• Identification of business opportunities• Business model canvas				

	<ul style="list-style-type: none"> • SWOT analysis and business concept • Marketing plan • Operational plan • Financial plan • Design of token economy • Decentralised organization structure 								
Teaching Methodology	Face-to-Face								
Bibliography	<p>New Venture Creation: A Framework for Entrepreneurial Start-up. Second Edition. Palgrave: London by Burns, P.</p> <p>Competitive Advantage: Creating and Sustaining Superior Performance, NY: Free Press, by Michael Porter</p> <p>How to Prepare a Feasibility Study: A Step-By-Step Guide Including Three Model Studies, Prentice-Hall by Robert E. Stevens</p> <p>International Financial Reporting 7th edition, Pearson, by Alan Melville</p> <p>Financial Modeling and Valuation: A Practical Guide to Investment Banking and Private Equity, Wiley; by Paul Pignataro</p> <p>Token Economy: How the Web3 reinvents the Internet Second Edition, BlockchainHub Berlin, by Shermin Voshmgir</p>								
Assessment	<table> <tr> <td>Examinations</td><td>50%</td></tr> <tr> <td>Assignments</td><td>40%</td></tr> <tr> <td>Class Participation and Attendance</td><td>10%</td></tr> <tr> <td></td><td>100%</td></tr> </table>	Examinations	50%	Assignments	40%	Class Participation and Attendance	10%		100%
Examinations	50%								
Assignments	40%								
Class Participation and Attendance	10%								
	100%								
Language	English								

Course Title	Ethics and Corporate Social Responsibility				
Course Code	MBC630				
Course Type	Elective				
Level	Master (2 nd Cycle)				
Year / Semester	2 nd Year / 3 rd Semester				
Teacher's Name	Marios Katsiolouides				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	This course incorporates both practical and theory-based knowledge in the area of ethics and corporate social responsibility (CSR). Students will discover how and why ethical issues can arise, and how-to best deal with such situations. Subsequently, students will examine the role of sustainable CSR as a strategy to improve products, profits and brand equity. This course will delve into measurable progress of CSR like, addressing the use of natural resources, pollution controls, monitoring ethical supply chains and expanded training of employees.				
Learning Outcomes	Upon successful completion of this course students should be able to: <ul style="list-style-type: none">• Identify CSR opportunities and decide which ones would be viable options for the firm• Evaluate CSR as a business response to the challenges of globalization• Formulate an ethical standing at a personal level• Demonstrate decision making skills using theory and logic for ethical issues• Analyze different perspectives and definitions of CSR				
Prerequisites	None		Co-requisites	None	
Course Content	Corporate Social Responsibility Social responsibility theory Stakeholder theory Ethical Frameworks Moral responsibility				

	<p>Moral development</p> <p>Moral theory</p> <p>Ethical Frameworks</p> <p>Moral reasoning process</p> <p>Employees: Obligations</p> <p>Greed and conflicts of interest</p> <p>Insider trading</p> <p>Theft and fraud</p> <p>Whistle-blowing</p> <p>Employees: Rights</p> <p>Discrimination and harassment</p> <p>Privacy</p> <p>Health and safety</p> <p>Consumers: Marketing</p> <p>Marketing ethics</p> <p>Pricing, quality, labeling</p> <p>International Business Ethics</p> <p>Bribery</p> <p>Repressive Regimes</p> <p>Overseas Suppliers</p>
Teaching Methodology	Face-to-Face
Bibliography	<p>Crane, A. and Matten, D., <i>Business ethics: Managing corporate citizenship and sustainability in the age of globalization</i>. Oxford University Press.</p> <p>Sims, R.R., <i>Ethics and corporate social responsibility: Why giants fall</i>. Greenwood Publishing Group.</p> <p>Trevino, L.K. and Nelson, K.A., <i>Managing business ethics: Straight talk about how to do it right</i>. John Wiley & Sons.</p> <p>Weiss, J.W., <i>Business ethics: A stakeholder and issues management approach</i>. Berrett-Koehler Publishers.</p>
Assessment	

	Examinations	60%	
	Class Participation and Attendance	10%	
	Assignments	30%	
		100%	
Language	English		

Course Title	Investment and Risk Management				
Course Code	MBC650				
Course Type	Elective				
Level	Master (2 nd Cycle)				
Year / Semester	2 nd Year / 3 rd Semester				
Teacher's Name	Onisiforos Iordanou				
ECTS	10	Lectures / week	3 Hours / 14 weeks	Laboratories / week	None
Course Purpose and Objectives	This course will introduce students to the fundamentals of investments, financial markets and the main types of risk factors that financial institutions face in the shifting economic setting. The course will familiarize students to the tools and techniques commonly used to recognize and manage financial risk. Students will probe into the development of estimation methods for valuation, measurement and risk mitigation of financial securities.				
Learning Outcomes	Upon successful completion of this course students should be able to: <ul style="list-style-type: none">• Identify the essential characteristics of various investment vehicles and the organization and operation of the securities markets.• Identify the concepts of return and risk, the ways in which they can be measured and their significance in terms of investor objectives.• Analyze the context of risk management, risk identification and prioritization.• Identify and apply the risk management theories in practical real life in banking, insurance, financial services and business.• Apply and analyze Derivatives Instruments• Apply the Black-Scholes formula and the binomial tree for options valuation.• Apply the VAR model.				
Prerequisites	None		Co-requisites	None	
Course Content	A Brief History of Risk and Return Buying and Selling Securities Security Types Mutual Funds The Stock Market and Common Stock Valuation Stock Price Behavior and Market Efficiency Interest Rates				

	Bond Prices and Yields Corporate Bonds Government Bonds Mortgage-Backed Securities Stock Options Option Valuation Futures Contracts Diversification and Asset Allocation Return, Risk, And the Security Market Line Performance Evaluation and Risk Management Value at Risk (VAR)		
Teaching Methodology	Face-to-Face		
Bibliography	Corrado C. and Jordan B.: FUNDAMENTALS OF INVESTMENT, Irwin McGraw Hill, (latest edition) Hull John: Risk Management and Financial Institutions, Prentice Hall, (latest edition) Zvi Bodie, Alex Kane & Alan J. Marcus: Investments, McGraw-Hill, International Editions, (latest edition) Hull John: Option, Futures & Other Derivatives, Prentice Hall, (latest edition) Jorion, Phillipe: Value at Risk, McGraw Hill, (latest edition) Sharpe W., Alexander G. and Bailey J.:INVESTMENTS, Prentice Hall, (latest edition).		
Assessment	Examinations	60%	
	Assignments	30%	
	Class Participation and Attendance	10%	
		100%	
Language	English		