MSc Data Analytics

APPENDIX I

Course Descriptors

Student workload allocation

University of Central Lancashire
UCLan Cyprus

Course Descriptors

LIST OF COMPULSORY COURSES AND ELECTIVE COURSES

Compulsory Courses		
	Course Code	**Course Name**
1.	CO4804	Masters Project
2.	CO4820	Critical Analysis
3.	CO4760	Exploratory Data Analysis
4.	CO4759	Enterprise Data Management
5.	CO4762	Knowledge Discovery
6.	CO4761	Business Intelligence and Data Analytics
Elective Courses (One course)		
	Course Code	**Course Name**
1.	CO4512	Information Security Management
2.	CO4519	Artificial Intelligence
3.	MD4099	International Strategic Management
4.	CO4102	ERP Systems
5.	CO4609	e-Marketing

COURSE DESCRIPTION

Course Title	**Masters Project**				
Course Code	**CO4804**				
Course Type	**Compulsory**				
Level	Level 7				
Year / Semester	Yearlong				
Teacher's Name	Josephina Antoniou				
ECTS	30 ECTS	Lectures /week	0.5	Tutorials	
Course Purpose and Objectives	• To develop the ability to solve complex problems, using appropriate skills and knowledge acquired elsewhere. • To develop student's ability to critically reflect on their work and on the work of others. • To enable students to demonstrate disciplines of time management, project planning and reporting on progress. • To encourage students to read to discover best practice. • To develop the ability to apply theory in the real world. • To foster an attitude of constructive criticism in evaluation. • To use theory appropriately when communicating about project work				
Learning Outcomes	On successful completion of this module a student will be able to: 1. Synthesize plans that take account of legal, ethical and professional issues and report on progress. 2. Develop solutions according to a set of requirements. 3. Contextualise the project work aligning it with academic literature or with other solutions. 4. Create a software product, carry out an investigation, or piece of research. 5. Communicate the process and product / findings of the work in an appropriate format. 6. Reflect on the value of the product or the value of the research / findings with reference to other work done in the field. 7. Critically reflect on the process of completing a significant project.				
Prerequisites	None	Required	None		
Course Content	Working under supervision Applying theory to practical problems or a research problem				

	Demonstrate awareness of appropriate legal, ethical, and professional issues associated with the subject domain.
Teaching Methodology	Each student will select his/her own topic for the project, within the constraints imposed by their particular Master's programme. Relevant literature and other sources must be used throughout the project, with thorough use of sources relating to the project question. The MSc Project Tutor is responsible for the overall co-ordination of projects. Each student is allocated an academic supervisor, who acts in a consultancy role, providing advice and guidance. A second reader is nominated to attend the interview session and read the final project report. The project handbook contains a schedule, advice on how to complete tasks, and a specification of what exactly is required for each deliverable. Projects with Industry partners: Students will have the opportunity to work on their thesis projects with an industry partner through a student placement subject to availability of appropriate projects. Each student will select a topic provided by an external organization and approved by the academic supervisor, within the constraints imposed by their particular Master's programme. If required by the project, each student may be allocated an advisor from the external organization, who may provide advice and guidance. Students will complete part of their thesis project assessment requirements (e.g. related to the working documents (proposal, contract, project plan and diary) and requirement analysis) through their placement under the supervision of the academic supervisor in collaboration with the advisor from the industry. Distance learning: The MSc Project Tutor will deliver live online lectures through Microsoft Teams to prepare students to undertake the Masters Project. The lecture sessions will be recorded and made available to the students through Blackboard. Students will be guided to ask questions synchronously (during the live lecture) or asynchronously through the blackboard's discussion forum. The tutor will provide appropriate feedback to students. Students will also be provided with relevant further reading, web links and resources for independent study. Supervision of students will be performed online through email, Skype and/or Microsoft Teams. The students will present their work and poster through Microsoft Teams.
Bibliography	Appropriate reading depends on the subject of each individual project.
Assessment	The student produces a thesis appropriate to their chosen route that describes: • Methods, tools and techniques used, • Evidence, arguments and conclusions about the project question, • Critical evaluation of methods and product. Three types of evidence are assessed: • Working documents: proposal, contract, project plan and diary (learning outcomes 1, 3)

<table>
<tr><td></td><td>
• Interview: demonstrating the product or outcomes and answering to an informal viva. (learning outcomes 1, 4, 6)
• Final written thesis. (learning outcomes 1- 7)
A more formal viva is required after the report has been assessed to allow moderation.
<table>
<tr><th>Number of Assessments</th><th>Form of Assessment</th><th>% weighting</th><th>Size of Assessment/ Duration/ Wordcount</th><th>Category of assessment</th><th>Learning Outcomes being assessed</th></tr>
<tr><td>1</td><td>Proposal</td><td>5%</td><td>1000 words</td><td>Coursework</td><td>1,3</td></tr>
<tr><td>1</td><td>Thesis and confirmatory interview</td><td>95%</td><td>11,000 words with
10 minutes interview</td><td>Coursework</td><td>1-7</td></tr>
<tr><td colspan="6">To pass this module students must achieve a mark of 50% or above, aggregated across all the assessments.</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Course Title	**Critical Analysis**				
Course Code	**CO4820**				
Course Type	**Compulsory**				
Level	Level 7				
Year / Semester	Semester 1				
Teacher's Name	Josephina Antoniou				
ECTS	10 ECTS	Lectures / week	1h	Laboratories / week	2h
Course Purpose and Objectives	The module aims to develop students' research, critical analysis and academic writing skills to Master's level.				
Learning Outcomes	1. Source and read academic literature and be able to critique its purpose and value 2. Construct a well referenced and critical review of literature 3. Design, carry out and report a simple experiment or survey 4. Critically evaluate different research methods for given situations				
Prerequisites	NONE	Required	NONE		
Course Content	Literature Reviewing: • Finding and reading academic literature • Writing a literature review • Critical thinking and writing • Critiquing academic papers Philosophy and Paradigms of Research: • Overview of research methods • Understanding research methods Collecting, Analysing and Reporting Research Data: • Interpreting data and statistics • Designing and conducting a simple experiment • Designing and conducting a survey • Reporting the results from an experiment or survey in an appropriate style • Referencing, citing and quoting • Writing an academic paper				
Teaching Methodology	This class is taught in different ways and the teaching strategy differs according to whether it is being delivered as a burst (two weekends) or a semester long course. When taught in burst mode the first half of the course covers the 'evaluation' of research and the second half the 'creating' of research.				

<table>
<tr><td></td><td>As a highly practical module – the teaching is by example and by doing. Lectures are collaborative with class input and work done beyond the class is made relevant to the students according to their courses.

As this is a skills-based course it is ideally suited to incremental class activities. The constraints on the assessment for this module require that students do work in between taught classes and that this is reviewed before formal assessment – to that end each assessment has a pre- hand in where students can get feedback.

The second assessment often ends up being quite a lot longer than 2500 words as it is very hard to write an academic paper to that length and given there is an emphasis on real word application in the course, students are encouraged to write a paper for publication in their second assignment.

<u>Distance learning</u>

The module tutor will deliver live online lectures through Microsoft Teams. During the live lectures the participating students will have the opportunity to engage in discussions, present their views and ask questions. The lecture sessions will be recorded and made available to the students through Blackboard. Students who cannot participate in a live lecture will have the opportunity to answer and reflect on guided questions in the subsequent live lectures or participate asynchronously on discussion boards. The module tutor will provide appropriate feedback to students' comments, as a result of the discussions. Feedback will primarily provided asynchronously through Blackboard, but when the need arises, the module tutor will schedule live sessions to provide further feedback. Where appropriate, students will be also provided with relevant further reading, web links and resources for independent study. Speakers from leading organizations will be invited, where possible, to deliver invited talks and enhance the students' experience.</td></tr>
<tr><td>Bibliography</td><td>The bibliography for this module is available via the on-line reading list – click on the link below:

http://cypruslists.central-lancashire.ac.uk/index.html</td></tr>
<tr><td>Assessment</td><td>
<table>
<tr><th>Number of Assessments</th><th>Form of Assessment</th><th>% weighting</th><th>Size of Assessment/ Duration/

Wordcount</th><th>Category of assessment</th><th>Learning Outcomes being assessed</th></tr>
<tr><td>1</td><td>Exam</td><td>50%</td><td>2 hours</td><td>Exam</td><td>1, 4</td></tr>
<tr><td>1</td><td>Research Paper</td><td>50%</td><td>2,000 words</td><td>Coursework</td><td>1, 2, 3, 4</td></tr>
<tr><td colspan="5">To pass this module students must achieve a mark of 50% or above aggregated across all the assessments.</td><td></td></tr>
</table>
</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Course Title	**Exploratory Data Analysis**				
Course Code	**CO4760**				
Course Type	**Compulsory**				
Level	LEVEL 7				
Year / Semester	Semester 2				
Teacher's Name	Milto Hadjikyriakou/Stella Kitromilidou				
ECTS	10 ECTS	Lectures / week	1h	Laboratories / week	2h
Course Purpose and Objectives	The aim of this module is to provide all the necessary tools for analysing datasets and visualising their properties. The main objectives of the module are to: • Provide essential exploratory techniques to describe data • Introduce computational methods for solving statistical problems • Introduce the R programming language, its packages, statistical functions, plotting systems • Demonstrate the principles for constructing visual representations of the data • Evaluate the information discovered from data analysis				
Learning Outcomes	On successful completion of this module a student will be able to: 1. Summarize techniques for descriptive, exploratory and confirmatory data analysis 2. Evaluate modelling concepts based on the characteristics of the data 3. Develop programs in R for performing statistical computing and visualising data 4. Make judgements about case studies through the assessment of discovered criteria from data analysis				
Prerequisites	NONE	Required	NONE		
Course Content	**Data objects and Attribute Types**: Nominal attributes, Binary Attributes, Ordinal Attributes, Numeric Attributes, Discrete and Continuous Attributes **Data Structures**: Arrays, Vectors, Lists. **Programming**: Variables, Conditional Statements, Loops, Functions. **Basic Statistical Descriptors**: Mean, Median Mode, Midrange, Range, Quartiles, and Interquartile Range				

	Mathematical Calculations in R: Numbers, Vectors, Matrices, Random Numbers. **Data Visualization**: Geometric Projection Visualisation Techniques, High-level plots, Low-level plots and the layout command par, Complex Data **Statistical Inference**: Descriptive Statistics, Statistical Inference for one and two samples, test of goodness of fit, Contingency Tables. **Regression**: Linear Regression, Logistic Regression: Logistic Model, Probit Model, Non-Parametric Regression: Local Polynomial Regression, Smoothing Splines, Additive Nonparametric Regression. **Analysis of Variance**: One-Way ANOVA, Multiple-Factor ANOVA. **Timeseries Analysis**
Teaching Methodology	Lecturers deliver factual material, introduce key concepts, direct reading and relate academic aspects to practical considerations. Tutorial sessions allow students to apply the techniques and reinforce the material delivered in the lecture. Practical sessions enable students to discuss material and complete online or paper-based exercises. The module will be assessed by one written coursework. The coursework requires the student to analyse datasets using the statistical methods and tools studied in class to reveal important findings and summarise, organise and communicate the generated knowledge from this data analysis through a report. Distance learning: The module tutor will deliver live online lectures through Microsoft Teams. In the first introductory lecture, the module leader will start building engagement and motivation with the module content by asking students to share their expectations and goals about the module in a real-time and anonymous manner, e.g., using Microsoft Forms. The module leader will then provide feedback on how the module will meet their expectations and at which level. The introductory course will also provide clear guidance on how course activities should be completed. During the live lectures the participating students will have the opportunity to engage in discussions, present their views and ask questions. The module tutor will use opportunities like office hours and breakout groups on Teams to encourage discussion among students. Also, discussion forums will be utilised for collaborative activities, such as soliciting questions and peer-reviewing. The lecture sessions will be recorded and made available to the students through Blackboard. Students who cannot participate in a live lecture will have the opportunity to answer and reflect on guided questions in the subsequent live lectures or participate asynchronously on discussion boards. The module tutor will provide appropriate feedback to students' comments, as a result of the discussions. Tutor feedback will primarily be provided in an asynchronous manner through Blackboard and emails, but when the need arises, the module tutor will schedule live sessions to provide further feedback. Where appropriate, students will be also provided with relevant further

<table>
<tr><td></td><td>reading, web links and resources for independent study. Speakers from leading organizations will be invited, where possible, to deliver invited talks and enhance the students' experience.

Students will also be provided with bi-weekly self-assessment quizzes, so that they can reflect on their progress.

Students will be provided with access to specialised software/ datasets/ scripts/ programmes, through which they will be able to complete the practical components of the module. The students will obtain the practical sheets from Blackboard and they are expected to follow the instructions included in the practical sheets to complete the lab work. If students have difficulties with a particular exercise, they are expected to contact the module tutor or post a question on the discussion forum, where the module tutor and/or their peers can provide feedback. Different means of communication will be utilized by the tutor to offer support to the students based on the reported issue, i.e. email, Skype, Microsoft Teams, etc.</td></tr>
<tr><td>Bibliography</td><td>http://cypruslists.central-lancashire.ac.uk/index.html
Support Material
• Lecture notes (available on Blackboard)
• Tutorial Worksheets (available on Blackboard)
• Research papers (available on Blackboard)
Recommended Books, Journals and Web Sites
• Lander, J. (2013): R for Everyone: Advanced Analytics and Graphics, Addison-Wesley Professional.
• Dalgaard, P. (2004): Introductory Statistics with R, Springer.
• The R-manuals, downloaded for free from http://www.r-project.org</td></tr>
<tr><td>Assessment</td><td>
<table>
<tr><th>Number of Assessments</th><th>Form of Assessment</th><th>% weighting</th><th>Size of Assessment/Duration/ Word count</th><th>Category of assessment</th><th>Learning Outcomes being assessed</th></tr>
<tr><td>1</td><td>Portfolio of Coursework</td><td>50%</td><td>2000 words</td><td>Coursework</td><td>1,2,3,4</td></tr>
<tr><td>2</td><td>Examination</td><td>50%</td><td>2 hours</td><td>Exam</td><td>1,2,3,4</td></tr>
<tr><td colspan="6">To pass this module students must achieve a mark of 50% or above.</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Course Title	**Enterprise Data Management**				
Course Code	**CO4759**				
Course Type	**Compulsory**				
Level	LEVEL 7				
Year / Semester	Semester 1				
Teacher's Name	Panayiotis Andreou				
ECTS	10 ECTS	Lectures / week	1.5h	Laboratories / week	1.5h
Course Purpose and Objectives	This module addresses the needs of a business for a well-designed information system. The module studies the design processes in forming both logical and physical database models, leading to the development of a fully functional database system. The main objectives of the module are to: • Apply design techniques to construct an information model. • Study a relational database management system. • Study and use the Structured Query Language (SQL) • Design and develop a relational database according to the requirements of an organisation				
Learning Outcomes	On successful completion of this module a student will be able to: 1. Evaluate the advantages and disadvantages of a database management systems and their role in an organisation 2. Design conceptual data models and construct appropriate physical structures 3. Develop a relational database using a modern DBMS 4. Apply appropriate retrieval techniques to retrieve data from a relational database				
Prerequisites	NONE	Required	NONE		
Course Content	**Databases**: introduction, actors, DBMS, Data Models, Schemas, Instances, Three-schema Architecture and Data Independence, Database System Environment, Centralized and Client/Server Architectures, Classification of DBMSs **Models**: Conceptual Models, Logical Models, Physical Models, Relational Model, Constraints				

	Conceptual Data Modelling: Entities, Keys, Relationship Types, Relationship Sets, Roles, Structural Constraints, Weak Entities, ER Diagrams, Design Issues, Subclasses, Superclasses and Inheritance, Specialization and Generalization, Extended ER, UNION, ERD to Relational Model. **Structured Query Language (SQL) and Database Programming**: DML, DDL, DCL, Triggers and Views, Procedures, Functions, Advanced Database Programming **Normalization**: Anomalies, 1NF, 2NF, 3NF, BCNF, 4NF, 5NF **DB Programming**: Interaction with DBMS with Java and .NET, Semi Structured Data and XML **Big Data**: Introduction and Overview, Intro to Web2.0, REST Principles, Replication, Scalability and Security Issues **Document-oriented NoSQL databases**: NoSQL, JSON, Key-Value data model, CouchDB, MongoDB, CouchDB Queries: Managing DBs, Managing Documents, Querying Data (e.g., with (Materialized) Views (Map-Reduce style in Javascript)) **Column Stores and NewSQL**: BigTable (Examples, How-big are Big-tables, Conceptual vs. Physical View), Apache HBase (Architecture, Features), NewSQL **Introduction to "Big-Data" Analytics**: Example Scenarios and Architectures, Map-Reduce/Dryad programming models, Map- Architecture, In-Memory Shuffling, Speculative Execution
Teaching Methodology	Lecturers deliver factual material, introduce key concepts, direct reading and relate academic aspects to practical considerations. Tutorial sessions allow students to apply the techniques and reinforce the material delivered in the lecture. Practical sessions enable students to discuss material and complete online or paper-based exercises. The module will be assessed by one assignment. The assignment requires the student to design the conceptual model of a database, realize the database in a DBMS and query the data using SQL. Distance learning The module tutor will deliver live online lectures through Microsoft Teams. In the first introductory lecture, the module leader will start building engagement and motivation with the module content by asking students to share their expectations and goals about the module in a real-time and anonymous manner, e.g., using Microsoft Forms. The module leader will then provide feedback on how the module will meet their expectations and at which level. The introductory course will also provide clear guidance on how course activities should be completed. During the live lectures the participating students will have the opportunity to engage in discussions, present their views and ask questions. The module tutor will use opportunities like office hours and breakout groups on Teams to encourage discussion among students. Also, discussion forums will be utilised for collaborative

	activities, such as soliciting questions and peer-reviewing. A programming revision session will employ gamification by allowing students to compete against their peers and compare their performance using an live leader board. The lecture sessions will be recorded and made available to the students through Blackboard. Students who cannot participate in a live lecture will have the opportunity to answer and reflect on guided questions in the subsequent live lectures or participate asynchronously on discussion boards. The module tutor will provide appropriate feedback to students' comments, as a result of the discussions. Tutor feedback will primarily be provided in an asynchronous manner through Blackboard and emails, but when the need arises, the module tutor will schedule live sessions to provide further feedback. Where appropriate, students will be also provided with relevant further reading, web links and resources for independent study. Speakers from leading organizations will be invited, where possible, to deliver invited talks and enhance the students' experience. Students will also be provided with bi-weekly self-assessment quizzes, so that they can reflect on their progress. Students will be provided with access to specialised software/ datasets/ scripts/ programmes, through which they will be able to complete the practical components of the module. The students will obtain the practical sheets from Blackboard and they are expected to follow the instructions included in the practical sheets to complete the lab work. If students have difficulties with a particular exercise, they are expected to contact the module tutor or post a question on the discussion forum, where the module tutor and/or their peers can provide feedback. Different means of communication will be utilized by the tutor to offer support to the students based on the reported issue, i.e. email, Skype, Microsoft Teams, etc.
Bibliography	http://cypruslists.central-lancashire.ac.uk/index.html **Support Material** • Lecture notes (available on Blackboard) • Tutorial Worksheets (available on Blackboard) • Research papers (available on Blackboard) **Recommended Books, Journals and Web Sites** • Abiteboul S., Manolescu I., Rigaux P., Rousset M-C, Senellart P., (2011), Web Data Management, Cambridge University Press, (available online). • Atzeni, P. (1999) Database Systems: Concepts, Language and Architectures. McGraw-Hill. • Beckman Center of the National Academies of Sciences & Engineering, (2013), The Beckman Database Research Self-Assessment Meeting, Irvine, CA, USA, October 14-15. • Connolly, T. and Begg, C., (2015) Database Systems: A practical approach to design, implementation and management (6th edition), Pearson.

<table>
<tr><td></td><td>
• Date, C. J. (2003) An Introduction to Database Systems, 8th ed. Addison-Wesley.
• Elmasri R., Navathe S.B., (2015) Fundamentals of Database Systems (7th Edition), Pearson.
• Garcia-Molina, H.I., Ullman, J. D. and Widom, J., (2008) Database Systems: The Complete Book, 2nd ed. Pearson.
• Kriegel, A. and Trukhnov, B. (2008). SQL Bible. John Wiley & Sons.
• Silberschatz, A, Korth, H. F. and Sudarshan S., (2010). Database Systems Concepts. 6th ed. McGraw-Hill.
</td></tr>
<tr><td>Assessment</td><td>
<table>
<tr><th>Number of Assessments</th><th>Form of Assessment</th><th>% weighting</th><th>Size of Assessment/Duration/ Word count</th><th>Category of assessment</th><th>Learning Outcomes being assessed</th></tr>
<tr><td>1</td><td>Portfolio of coursework</td><td>50%</td><td>2000 words</td><td>Coursework</td><td>1,2,3,4</td></tr>
<tr><td>2</td><td>Examination</td><td>50%</td><td>2 hours</td><td>Exam</td><td>1,2,4</td></tr>
<tr><td colspan="6">To pass this module students must achieve a mark of 50% or above.</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Course Title	**Knowledge Discovery**				
Course Code	**CO4762**				
Course Type	**Compulsory**				
Level	Level 7				
Year / Semester	Semester 2				
Teacher's Name	Panayiotis Andreou				
ECTS	10 ECTS	Lectures / week	1.5h	Laboratories / week	1.5h
Course Purpose and Objectives	This module considers the concepts and applications of knowledge discovery. It discusses the architecture of data-warehouses and the processes involved in their creation and maintenance. A useful range of important techniques used to data-mine large datasets — to visualise, explore, and find unsuspected patterns, clusters, correlations, connections etc. — are discussed. The main objectives of the module are to: • Understand the value of knowledge discovery in solving real-world problems • Understanding of foundational concepts underlying data mining. • Evaluate important knowledge discovery techniques • Apply a wide range of knowledge discovery tools to real-world problems. • Evaluate the processes involved in the creation and maintenance of data warehouses.				
Learning Outcomes	On successful completion of this module a student will be able to: 1. Describe data-mining techniques and assess their applicability 2. Evaluate models/algorithms with respect to their accuracy 3. Critique the results of a data mining exercise 4. Develop hypotheses based on the analysis of the results obtained and test them 5. Make judgements about case studies through the assessment of discovered criteria from data mining				
Prerequisites	NONE	Required	NONE		
Course Content	**Knowledge Discovery Concepts**: Data, Databases, Data Warehouses, Patterns, Technologies, Applications, Research Directions.				

	Data Preprocessing: Cleaning, Integration, Reduction, Transformation **Data Warehousing and OLAP**: Architectures, Modelling, Data Cubes, OLAP, Design and Usage, Implementation **Frequent Patterns, Associations, and Correlations**: Basic Concepts, Apriori Algorithm, Generating Association Rules from Frequent Itemsets, Pattern-Growth Approach, Mining Frequent Itemsets Using Vertical Data Format, Mining Closed and Max Patterns, Pattern Evaluation, Advanced Pattern Mining **Classification**: Basic Concepts, Decision Tree Induction, Bayes Classification Methods, Rule-Based Classification, Model Evaluation and Selection, Support Vector Machines, Neural Networks, Advanced Methods **Cluster Analysis**: Partitioning Methods, Hierarchical Methods, Density-Based Methods, Grid-Based Methods, Advanced Methods **Outlier Detection**: Outliers and Outlier Analysis, Methods, Statistical Approaches, Statistical Approaches, **Selected Topics in Knowledge Discovery**: Personalized exploration, guided analysis, Data Mining and Society
Teaching Methodology	Lecturers deliver factual material, introduce key concepts, direct reading and relate academic aspects to practical considerations. Tutorial sessions allow students to apply the techniques and reinforce the material delivered in the lecture. Practical sessions enable students to discuss material and complete online or paper-based exercises. The module will be assessed by one assignment. The assignment requires the student to design the conceptual model of a database, realize the database in a DBMS and query the data using SQL. Distance learning The module tutor will deliver live online lectures through Microsoft Teams. In the first introductory lecture, the module leader will start building engagement and motivation with the module content by asking students to share their expectations and goals about the module in a real-time and anonymous manner, e.g., using Microsoft Forms. The module leader will then provide feedback on how the module will meet their expectations and at which level. The introductory course will also provide clear guidance on how course activities should be completed. During the live lectures the participating students will have the opportunity to engage in discussions, present their views and ask questions. The module tutor will use opportunities like office hours and breakout groups on Teams to encourage discussion among students. Also, discussion forums will be utilised for collaborative activities, such as soliciting questions and peer-reviewing. The assessment will employ gamification elements by allowing students to compete against their peers for the workflow with the highest accuracy. The first three winners will receive a badge in blackboard through the achievements component.

	The lecture sessions will be recorded and made available to the students through Blackboard. Students who cannot participate in a live lecture will have the opportunity to answer and reflect on guided questions in the subsequent live lectures or participate asynchronously on discussion boards. The module tutor will provide appropriate feedback to students' comments, as a result of the discussions. Tutor feedback will primarily be provided in an asynchronous manner through Blackboard and emails, but when the need arises, the module tutor will schedule live sessions to provide further feedback. Where appropriate, students will be also provided with relevant further reading, web links and resources for independent study. Speakers from leading organizations will be invited, where possible, to deliver invited talks and enhance the students' experience. Students will also be provided with bi-weekly self-assessment quizzes, so that they can reflect on their progress. Students will be provided with access to specialised software/ datasets/ scripts/ programmes, through which they will be able to complete the practical components of the module. The students will obtain the practical sheets from Blackboard and they are expected to follow the instructions included in the practical sheets to complete the lab work. If students have difficulties with a particular exercise, they are expected to contact the module tutor or post a question on the discussion forum, where the module tutor and/or their peers can provide feedback. Different means of communication will be utilized by the tutor to offer support to the students based on the reported issue, i.e. email, Skype, Microsoft Teams, etc.
Bibliography	http://cypruslists.central-lancashire.ac.uk/index.html **Support Material** • Lecture notes (available on Blackboard) • Tutorial Worksheets (available on Blackboard) •Research papers (available on Blackboard) **Recommended Books, Journals and Web Sites** • Han, J., Kamber, M.,. Pei, J., (2012), Data Mining: Concepts and Techniques, 3rd Edition, Elsevier. • Connolly, T.M., Begg C.E., (2009), Database Systems: A Practical Approach to Design, Implementation and Management, 5th edition, Addison Wesley. • Data Mining and Knowledge Discovery, http://www.springerlink.com/content/1573-756X (Journal) • Garcia-Molina, H. et al. (2008), Database Systems: The Complete Book, 2nd ed. Pearson. • Hand, D., Mannila, H., Smyth, P., 2001, Principles of Data Mining, MIT Press • http://www.the-data-mine.com • Roiger, R.J., Geatz, M.W., (2003), Data Mining: A Tutorial-based Primer, Addison Wesley

<table>
<tr><td>Assessment</td><td>
<table>
<tr><th>Number of Assessments</th><th>Form of Assessment</th><th>% weighting</th><th>Size of Assessment/Duration/

Word count</th><th>Category of assessment</th><th>Learning Outcomes being assessed</th></tr>
<tr><td>1</td><td>Portfolio of Coursework</td><td>50%</td><td>2000 words</td><td>Coursework</td><td>1,2,3,4,5</td></tr>
<tr><td>2</td><td>Examination</td><td>50%</td><td>2 hours</td><td>Exam</td><td>1,2,3,4</td></tr>
<tr><td colspan="6">To pass this module students must achieve a mark of 50% or above.</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Course Title	**Business Intelligence and Data Analytics**				
Course Code	**CO4761**				
Course Type	**Compulsory**				
Level	Level 7				
Year / Semester	Semester 1				
Teacher's Name	Zach Anthis				
ECTS	10 ECTS	Lectures / week	1.5h	Laboratories / week	1.5h
Course Purpose and Objectives	The main aim of the module is to provide a comprehensive, up-to-date guide to modern management support system technologies, and showcase how they can be used for better decision-making. The main objectives of the module are to: • Provide an in-depth knowledge of the use of enterprise systems • Study the type of data that the enterprise systems generate • Study how that data might be used to support decision making within an enterprise				
Learning Outcomes	On successful completion of this module a student will be able to: 1. Identify and evaluate the role of enterprise systems in an organisation. 2. Discuss and apply a range of predictive and prescriptive analytical techniques to business scenarios. 3. Query relevant data from an enterprise system for analysis purposes. 4. Critically evaluate the range of relevant business intelligence tools available in the marketplace.				
Prerequisites	NONE	Required	NONE		
Course Content	**Decision Making and Analytics**: Business Environment, Computerized Support, Managerial Decision Making, Decision Support Systems, BI Methodology, Analytics Overview, **Descriptive Analytics**: Data Warehouses, Data Mining Concepts, Business Reporting, Visual Analytics, and Business Performance Management				

	Predictive Analytics: Data Mining, CRISP-DM, SEMMA, KDD, Tools, Techniques for Predictive Modelling, Text Analytics, Text Mining, Sentiment Analysis, Web Analytics, Web Mining, and Social Analytics **Prescriptive Analytics**: Model-Based Decision Making: Optimization and Multi-Criteria Systems, Modelling and Analysis: Heuristic Search Methods and Simulation, Automated Decision Systems and Expert Systems, Knowledge Management and Collaborative Systems **Big Data and Future Directions for Business Analytics**: Big Data Analytics, Emerging Trends and Future Impacts
Teaching Methodology	Lecturers deliver factual material, introduce key concepts, direct reading and relate academic aspects to practical considerations. Tutorial sessions allow students to apply the techniques and reinforce the material delivered in the lecture. Practical sessions enable students to discuss material and complete online or paper-based exercises. The module will be assessed by one assignment. The assignment requires the student to design the conceptual model of a database, realize the database in a DBMS and query the data using SQL. Distance learning The module tutor will deliver live online lectures through Microsoft Teams. In the first introductory lecture, the module leader will start building engagement and motivation with the module content by asking students to share their expectations and goals about the module in a real-time and anonymous manner, e.g., using Microsoft Forms. The module leader will then provide feedback on how the module will meet their expectations and at which level. The introductory course will also provide clear guidance on how course activities should be completed. During the live lectures the participating students will have the opportunity to engage in discussions, present their views and ask questions. The module tutor will use opportunities like office hours and breakout groups on Teams to encourage discussion among students. Also, discussion forums will be utilised for collaborative activities, such as soliciting questions and peer-reviewing. The lecture sessions will be recorded and made available to the students through Blackboard. Students who cannot participate in a live lecture will have the opportunity to answer and reflect on guided questions in the subsequent live lectures or participate asynchronously on discussion boards. The module tutor will provide appropriate feedback to students' comments, as a result of the discussions. Tutor feedback will primarily be provided in an asynchronous manner through Blackboard and emails, but when the need arises, the module tutor will schedule live sessions to provide further feedback. Where appropriate, students will be also provided with relevant further reading, web links and resources for independent study. Speakers from leading organizations will be invited, where possible, to deliver invited talks and enhance the students' experience.

	Students will also be provided with bi-weekly self-assessment quizzes, so that they can reflect on their progress. Students will be provided with access to specialised software/ datasets/ scripts/ programmes, through which they will be able to complete the practical components of the module. The students will obtain the practical sheets from Blackboard and they are expected to follow the instructions included in the practical sheets to complete the lab work. If students have difficulties with a particular exercise, they are expected to contact the module tutor or post a question on the discussion forum, where the module tutor and/or their peers can provide feedback. Different means of communication will be utilized by the tutor to offer support to the students based on the reported issue, i.e. email, Skype, Microsoft Teams, etc.
Bibliography	http://cypruslists.central-lancashire.ac.uk/index.html **Support Material** • Lecture notes (available on Blackboard) • Tutorial Worksheets (available on Blackboard) • Research papers (available on Blackboard) **Recommended Books, Journals and Web Sites** • Sharda R., Delen D., Turban E., (2014), Business Intelligence and Analytics, Systems for Decision Support, 10th Ed., Pearson. • Luvai F. Motiwalla (2012), Enterprise Systems for Management. Luvai Motiwalla, Jeffrey Thompson, 2nd Ed., Prentice Hall New Jersey [ISBN: 9780132570169] • Ward, John, Daniel, Elizabeth (2006), Benefits Management – Delivering Value from IS and IT Investments, Wiley • Turban Sharda Delen (2014), Decision Support and Business Intelligence Systes, 9th Ed. [ISBN: 9781292024264] • Thomas H. Davenport, International Institute for Analytics 2012, Enterprise Analytics: Optimize Performance, Process, and Decisions Through Big Data, FT Press [ISBN: 9780133039436] • S. Christian Albright, Wayne L. Winston 2015, Business Analytics: Data Analysis and Decision Making, 5th Ed., Cengage •Learning • European Business Review Journal • Harvard Business Review Journal • Journal of Strategic Information Systems
Assessment	

Number of Assessments	**Form of Assessment**	**% weighting**	**Size of Assessment/Duration/ Word count** (indicative only)	**Category of assessment**	**Learning Outcomes being assessed**

	1	Portfolio of coursework	50%	2000 words	Coursework	1,2,3,4
	2	Examination	50%	2 hours	Exam	1,2,4
	To pass this module students must achieve a mark of 50% or above.					
Language	English					

<table>
<tr><td>Course Title</td><td colspan="5">Information Security Management</td></tr>
<tr><td>Course Code</td><td colspan="5">CO4512</td></tr>
<tr><td>Course Type</td><td colspan="5">Optional</td></tr>
<tr><td>Level</td><td colspan="5">Level 7</td></tr>
<tr><td>Year / Semester</td><td colspan="5">Year 1 / Semester 2</td></tr>
<tr><td>Teacher’s Name</td><td colspan="5">Andria Prokopiou</td></tr>
<tr><td>ECTS</td><td>10 ECTS</td><td>Lectures / week</td><td>1h</td><td>Laboratories / week</td><td>1h</td></tr>
<tr><td>Course Purpose and Objectives</td><td colspan="5">An increasing level of security threats and the existence of vulnerabilities expose organisations to frequent security risks. Managing those risks is essential not only for protecting organisational and clients’ assets but also as a competitive business advantage. This module exposes students to Information Security Management and Information Risk Management concepts and their use in practice to enforce preventive security.
The aims of the module are:
• To introduce information security and risk management standards and methods that students will most likely encounter as a security professional.
• To evaluate the applicability and critically analyse alternatives for information security management and risk assessment.
• To apply techniques and conduct activities involved in the process of information security and risk management.
• To critically evaluate the benefits and pitfalls of compliance-based security.</td></tr>
<tr><td>Learning Outcomes</td><td colspan="5">On successful completion of this module a student will be able to:
1. Select and use applicable standards and methods for information security and risk management.
2. Compare and critically evaluate alternatives for information security management and risk assessment.
3. Conduct and properly document risk assessment based on a given scenario.
4. Find and evaluate appropriate published information to remain up-to-date about threats, vulnerabilities and patches.
5. Critically discuss benefits and pitfalls of compliance in respect to security.</td></tr>
<tr><td>Prerequisites</td><td colspan="2">NONE</td><td>Required</td><td colspan="2">NONE</td></tr>
</table>

Course Content	**Information Security Management** ISO/IEC 27K family; ISO/IEC 27001 implementation, certification and auditing; scope of an Information Security Management System (ISMS); the Plan, Do, Check, Act (PDCA) process; selection of clauses and controls; documentation; advantages/disadvantages of an ISMS; maintaining the ISMS. Other management and governance approaches, such as COBIT, and domain-specific security standards such as the Payment Card Industry Data Security Standard (PCI DSS) and the Health Insurance Portability and Accountability Act |(HIPAA). **Information Security Risk Management** Essential concepts; different standards and methods (e.g., ISO/IEC 27005, SP-800-30, CORAS, CRAMM); the risk management process according to ISO 27005; identify assets; identify, analyse and evaluate risks; the Common Vulnerability Scoring System (CVSS) and other approaches for risk level estimation; identify and evaluate risk treatment options; documentation; monitor and review the effectiveness of controls selected; find information relevant to risk management (e.g. databases such as the National Vulnerability and the Open Security Vulnerability Database (OSVDB), security intelligence labs and specialised news media). **Compliance and Security** Factors driving compliance; compliance problems; relation between compliance and security.
Teaching Methodology	Lectures are used to present new knowledge and concepts illustrated by examples, and to expose students to experiences reported by visiting speakers, whenever possible. While tutorials are used to consolidate, and to build skills by applying presented knowledge and concepts to different situations found in practice. Tutorials take advantage of exercises, analysis of scenarios, and discussion as instruments for learning. Directed reading will also be used to complement and broaden the content of lectures, and to provide material for in-class discussion. The assignment will assess students' ability to plan, conduct and report a risk assessment based on a realistic, yet fictitious, scenario. The examination will assess the understanding of concepts and their application to unseen situations, as well as students' critical skills related to topics covered. <u>Distance learning</u> The module tutor will deliver live online lectures through Microsoft Teams. In the first introductory lecture, the module leader will start building engagement and motivation with the module content by asking students to share their expectations and goals about the module in a real-time and anonymous manner, e.g., using Microsoft Forms. The module leader will then provide feedback on how the module will meet their

	expectations and at which level. The introductory course will also provide clear guidance on how course activities should be completed. During the live lectures the participating students will have the opportunity to engage in discussions, present their views and ask questions. The module tutor will use opportunities like office hours and breakout groups on Teams to encourage discussion among students. Also, discussion forums will be utilised for collaborative activities, such as soliciting questions and peer-reviewing. The lecture sessions will be recorded and made available to the students through Blackboard. Students who cannot participate in the live lectures will have the opportunity to answer and reflect on guided questions posted by the module tutor asynchronously, through a Blackboard discussion forum. The tutor will provide appropriate feedback to students' comments posted on the discussion board. Students will also be provided with relevant further reading, web links and resources for independent study. Speakers from leading organizations will be invited, where possible, to deliver live invited talks and enhance the students' experience. Tutorials will further enhance student's skills in terms of communication, time management and critical thinking skills as the students will have the opportunity to work in small groups and participate more actively.
Bibliography	The bibliography for this module is available via the on-line reading list – click on the link below: http://cypruslists.central-lancashire.ac.uk/index.html ISO/IEC-27001 (2013), Information technology – Security techniques – Information security management systems – Requirements, ISO. ISO/IEC-27002 (2013), Information technology – Security techniques – Code of practice for information security management, ISO. ISO/IEC-27005 (2011), Information technology – Security techniques – Information security risk management, ISO. Moving from ISO/IEC 27001:2005 to ISO/IEC 27001:2013. BSI Group (2013). Online resource. http://www.bsigroup.com/LocalFiles/en-GB/iso-iec-27001/resources/BSI-ISO27001-transition-guide-UK-EN-pdf.pdf (accessed January 2017) Stoneburner, G., Goguen, A., Feringa A. (2002), NIST Special Publication 800-30, Risk Management Guide for Information Technology Systems, National Institute of Standards and Technology.

Assessment	**Number of Assessments**	**Form of Assessment**	**% weighting**	**Size of Assessment/ Duration/ Wordcount** (indicative only)	**Category of assessment**	**Learning Outcomes being assessed**
	1	Risk assessment report	50%	2000 words	Coursework	1,3,4
	1	Examination	50%	2 hours	Exam	1,2,5
	To pass this module students must achieve a mark of 50% or above, aggregated across all the assessments.					
Language	English					

Course Title	**Artificial Intelligence**				
Course Code	**CO4519**				
Course Type	**Optional**				
Level	LEVEL 7				
Year / Semester	Year 1/ Semester 2				
Teacher's Name	Vered Aharonson				
ECTS	10 ECTS	Lectures / week	1x1h	Laboratories / week	1x2h
Course Purpose and Objectives	The module aims to: • Demonstrate various AI models and techniques to develop understanding of AI solutions of a range of problems and explore the expected performance of such models. • Practically explore a wide range of AI techniques, which are being applied in industry and/or research. • To demonstrate an awareness of current and new/future developments in the field of AI and its applications. • Identify and explore real-world problems and determine which AI approaches are suitable for their solutions.				
Learning Outcomes	On successful completion of this module a student will be able to: 1. Research and report on a wide range of AI techniques, which are being applied in industry or research. 2. Describe and critically assess the current and new/future developments in the field of AI and its applications. 3. Design solutions to a range of problems and implement various AI models and techniques to characterise the performance of these solutions as compared to other techniques. 4. Analyse and critically evaluate real-world problems and select the appropriate AI approach for their solutions.				
Prerequisites	NONE	Required	NONE		
Course Content	This module provides a broad introduction into AI techniques and a detailed understanding in the application of some critical approaches, so that when students				

	go into industry or research, they will be able to choose and develop a solution using the correct AI techniques for the problems which arise. Specifically, the module will cover all of the following broad areas, but will vary the detail and techniques introduced underneath each area depending on topical issues: Introduction of AI • Introduction to AI and Intelligent Agents • Solving Problems by Searching: Informed Search Methods Knowledge and Reasoning • Agents that Reason Logically: Logical Reasoning Systems • Practical Planning/Uncertainty/Making Decisions Learning • Observations; Belief Networks • Machine Learning; Reinforcement Learning Communicating, Perceiving and Acting • Agents that Communicate • Natural Language Processing • Perception/Robotics Additional Topics • AI Research Trends and Future Applications • Languages, Algorithms and Complexity
Teaching Methodology	*Teaching and Learning Strategy* The teaching and learning strategy is designed to encourage a deep approach to learning with an emphasis on collaborative, evidence based and problem based learning suitable to industry through the use of teams (working teams) and problem solving, but will also assess individual skills and independent work. The teaching/learning strategy for this module has been designed to ensure that the learning outcomes will be achieved. Various forms of teaching strategy would be employed to provide stimulation and participation amongst students. *Teaching and Learning Methods* A workshop approach will be used which integrates lectures with practical activities. Problem based learning will be used, with students working in small groups applying

	concepts and techniques to examples derived from the particular focus of their degree programme. *Feedback Methods* Continuous feedback shall be given to students throughout the semester in the following manner: Feedback given to students in response to assessed work: • Feedback discussed as part of a lab session in a generalised manner • Individual feedback on request and after submission of portfolio components • Model answers will be provided in response to portfolio components *Developmental feedback generated through teaching activities:* • Feedback is given during lab sessions • Dialogue between students and staff in lectures and labs This module will be taught in a semester and will be supported by directed study of textbooks and journal articles. Students will be encouraged to discuss case studies, reading texts or share their experiences on the current topic. Intellectual skills such as critical analysis, synthesis and problem solving will be practiced through active learning processes within group learning activities part of the lectures and labs. Independent thought and understanding of intellectual skills will be examined by questioning students, by allowing for student-led presentations, by preparing completing unseen written examinations at the end of the semester and problem-based exercises as part of their portfolio submission. For the coursework assessment component, i.e. the portfolio, students do some group work and some individual work. They use a variety of techniques for particular scenarios, and they are asked to critically reflect on their work and to make links with the theory. For their exam assessment, students are asked to critically evaluate techniques, processes and theories. They are also given particular scenarios and asked to make recommendations for practice.
Bibliography	Russell, S.J. and Norvig, P., 2016. Artificial intelligence: a modern approach. Malaysia; Pearson Education Limited. Alpaydin, E., 2004. Introduction to machine learning. MIT Press. Poole, D.L. and Mackworth, A.K., 2010. Artificial Intelligence: foundations of computational agents. Cambridge University Press. Michael, N., 2005. Artificial intelligence a guide to intelligent systems. The bibliography for this module is also available via the on-line reading lists – click on the links below: http://readinglists.central-lancashire.ac.uk/index

<table>
<tr><td></td><td>http://cypruslists.central-lancashire.ac.uk/index.html</td></tr>
<tr><td>Assessment</td><td>
<table>
<tr><th>Number of Assessments</th><th>Form of Assessment</th><th>% weighting</th><th>Size of Assessment/ Duration/ Word count</th><th>Category of assessment</th><th>Learning Outcomes being assessed</th></tr>
<tr><td>1</td><td>Practical Portfolio</td><td>50%</td><td>2,000 words</td><td>Coursework</td><td>1,3</td></tr>
<tr><td>1</td><td>Examination</td><td>50%</td><td>2 hours</td><td>Written exam</td><td>1,2,4</td></tr>
</table>
To pass this module you must achieve a mark of 50% or above aggregated across all the assessments
</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Course Title	**International Strategic Management**				
Course Code	**MD4099**				
Course Type	**Optional**				
Level	Level 7				
Year / Semester	Semester 2				
Teacher's Name	Panayiotis Kontakos / Olga Kvasova				
ECTS	10 ECTS	Lectures / week	4h	Laboratories / week	2h
Course Purpose and Objectives	This module aims to examine both the strategic and operational decisions that managers must make in order to engage in global activities. By engaging with the theoretical literature and examining international business in action, students will assess the links between globalisation and competitiveness, both at corporate and national levels. As a result, students will be able to evaluate the impacts of globalisation and internationalisation. Detailed research into case-studies will also be conducted as a means of explaining the real-time situations they experience.				
Learning Outcomes	On successful completion of this module a student will be able to: 1. Identify and critically assess the major features of the Global Economy, the 'Triad' economies, shifts in global economic powers and FDI trends. 2. Employ Comparative Advantage and related trade models in analysing a country's role in the world economy. 3. Examine and critically assess the external forces shaping the business environment. 4. Use strategic tools and the strategic management literature to evaluate an international company's strategic options				
Prerequisites	NONE		Required		NONE
Course Content	This module will analyse the nature of strategic and structural developments in international business, bringing together a wide array of theoretical and empirical material that has been produced over the last decade. Key issues will include: • An overview of the 'Global Economy' • Foreign direct investment trends and implications • Trade theories, trade barriers and trade blocs • Host country effects of international firms, the anti-globalization critique • Competitive strategy, strategic groups and market segmentation				

	• International strategy • Mergers acquisitions and alliances • Cultural and political issues within The Multinational Firm • Ethical Issues in International Business • Global Risk Management • Crisis Management and Leadership Detailed case-studies will be employed to test out the various theoretical perspectives, offering students the opportunity to gain genuine insights into the operation of international business.
Teaching Methodology	The module will be delivered on campus through a seminar combining tutor delivery and application through individual and group tasks. Students will be encouraged through tutor input and class based and online activities to apply strategic models and internationalisation strategy to real-life organisations and make judgements on strategic direction and effectiveness. Formal input will cover the module content, supplemented by pre-reading, small group activity and discussion and online tasks. Students will produce an evaluation of an international company's position to demonstrate their understanding and higher order thinking skills. Students will also compile a report evaluating a company's strategic decision-making. The summative assessment tasks are designed to meet the module learning outcomes *Distance Learning* The module tutor will deliver live online lectures through Microsoft Teams. During the live lectures the participating students will have the opportunity to engage in discussions, present their views and ask questions. The lecture sessions will be recorded and made available to the students through Blackboard. Students who cannot participate in a live lecture will have the opportunity to answer and reflect on guided questions in the subsequent live lectures or participate asynchronously on discussion boards. The module tutor will provide appropriate feedback to students' comments, as a result of the discussions. Feedback will primarily provided asynchronously through Blackboard, but when the need arises, the module tutor will schedule live sessions to provide further feedback. Where appropriate, students will be also provided with relevant further reading, web links and resources for independent study. Speakers from leading organizations will be invited, where possible, to deliver invited talks and enhance the students' experience.
Bibliography	**Essential Reading** Ietto-Gillies, G. (2012) *Transnational corporations and international production : concepts, theories and effects* . 2nd ed. Cheltenham :, Edward Elgar. Johnson, G. (2017) *Exploring strategy : text and cases* . Eleventh edition. Gerry Johnson (ed.). [Online]. Harlow, England :, Pearson. Available from: Electronic reproduction. Ann Arbor, MI : ProQuest, 2016. Available via World Wide Web. Access may be limited to ProQuest affiliated libraries. Deresky, H. (2017) *International management: managing across borders and cultures : text and cases* . Ninth edition, Global edition. [Online]. Boston,

[Massachusetts] :, Pearson. Available from: Electronic reproduction. Ann Arbor, MI : ProQuest, 2016. Available via World Wide Web. Access may be limited to ProQuest affiliated libraries.

Bartlett, C.A. (2014) *Transnational management : text, cases, and readings in cross-border management* . 7th ed. Paul W. Beamish (ed.). London, Ontario :, McGraw-Hill.

Thompson, J.L. (2017) *Strategic management : awareness and change* . Eighth edition. Frank Martin & Jonathan M. Scott (eds.). Andover :, Cengage Learning.

Thompson, J.L. (2020) *Strategic management : awareness and change [electronic resource]* . Ninth edition. Jonathan M. Scott & Frank Martin (eds.). Australia :, Cengage Learning.

Peng, M.W. (2014) *Global strategic management* . 3rd ed., International ed. Andover : Mason, Ohio :, Cengage Learning distributor; South-Western .

Recommended Reading

Boltanski, L. (2018) *The new spirit of capitalism* . New updated edition. Gregory Elliott & Eve Chiapello (eds.). London :, Verso.

Chia, R.C.H. & Holt, R. (2009) *Strategy without design: the silent efficacy of indirect action*. [Online]. Cambridge, Cambridge University Press. Available from: https://ebookcentral.proquest.com/lib/uclan-ebooks/detail.action?docID=464859.

Hill, C.W.L. (2017) *International business : competing in the global marketplace.* International student edition.; 11e /. G. Tomas M. Hult (ed.). New York, NY :; New York, NY :, McGraw-Hill Education; McGraw-Hill Education.

Lasserre, P. (2017) *Global Strategic Management.* 4th ed. [Online]. London :, Macmillan Education UK. Available from: Electronic reproduction. Ann Arbor, Michigan : ProQuest Ebook Central, 2020. Available via World Wide Web. Access may be limited to ProQuest Ebook Central affiliated libraries.

Journals

American Graduate School of International Management (n.d.) *JOURNAL OF INTERNATIONAL MANAGEMENT*. New York, Wiley in association with Thunderbird, American Graduate School of International Management.

Anon (1970) *Journal of international business studies.* Atlanta, Ga. :; Bowling Green, Ohio :, School of Business Administration Georgia State University ; Association for Education in International Business.

Anon (n.d.) *Critical Perspectives on international business | Volume list*. [Online]. Available from: http://www.emeraldinsight.com/journals.htm?issn=1742-2043.

Anon (n.d.) *Harvard Business Review*. [Online]. Available from: http://atoz.ebsco.com/Titles/SearchResults/686?

Websites

Anon (n.d.) *globalEDGE: Your source for Global Business Knowledge*. [Online]. Available from: http://globaledge.msu.edu/.

<table>
<tr><td></td><td>Anon (n.d.) Global edge - Connecting the Overseas Property Industry. [Online]. Available from: http://www.globaledge.co.uk/.

Anon (n.d.) Home UNCTAD. [Online]. Available from: http://unctad.org/en/Pages/Home.aspx</td></tr>
<tr><td>Assessment</td><td>
<table>
<tr><th>Number of Assessments</th><th>Form of Assessment</th><th>% weighting</th><th>Size of Assessment/Duration/

Wordcount (indicative)</th><th>Category of assessment</th><th>Learning Outcomes being assessed</th></tr>
<tr><td>1</td><td>Exam</td><td>50%</td><td>2 hours</td><td>Written exam</td><td>1, 2</td></tr>
<tr><td>1</td><td>Group Presentation</td><td>50%</td><td>30 minutes</td><td>Practical Assessment</td><td>3, 4</td></tr>
<tr><td colspan="6">Students must complete all assignments and achieve an average mark of at least 50%.</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Course Title	**ERP Systems**				
Course Code	**CO4102**				
Course Type	**Optional**				
Level	Level 7				
Year / Semester	Semester 2				
Teacher's Name	Josephina Antoniou				
ECTS	10 ECTS	Lectures / week	2h	Laboratories / week	1h
Course Purpose and Objectives	The aims of the module are to: • Discuss the evolution of information systems and their historical role in organizations and importance of systems integration. • Introduce and discuss the components and architecture of ERP (Enterprise Resource Planning) systems. • Explore the role of an ERP system in an organization in terms of its efficiency and worker productivity. • Critically evaluate the implementation process of an ERP system, including ERP selection, selection criteria, success factors and effective programme management. • Identify the ethical, legal, global and security challenges related to ERP systems and implementations and how to protect the company assets. • Discuss the role and goals of CRM (Customer Relationship Management) systems in the context of ERP.				
Learning Outcomes	On completion of this module students are expected to be able to: 1. Critically discuss the evolution of information systems and their historical role in organizations leading to systems integration and eventually Enterprise Resource Planning (ERP). 2. Describe ERP systems and their components and architecture. Critically evaluate the benefits and drawbacks of implementing ERP systems, the role of ERP systems in systems integration, and how they can help an organization improve its efficiency and worker productivity. 3. Describe and analyse the ERP implementation process (e.g., the ERP life cycle, business process re-engineering, project management, and change management). 4. Evaluate and discuss the role of staff, vendors, consultants, and the organization in making the ERP implementation process successful.				

	5. Critically discuss the concepts relating to ethical, legal, global and security challenges related to ERP systems and implementations and how to protect the company assets.		
Prerequisites	NONE	Required	NONE
Course Content	Overview of Enterprise Resource Planning Overview, historical evolution, benefits and drawbacks, leading vendors and industry trends. ERP Systems Systems Integration Enterprise systems architecture ERP Implementation Review of the development life cycle Implementation strategies Selection of software (and vendor) Operations implementation People and Organization Identify critical success factors in an ERP implementation (skills, people, commitment, management) Business processes re-engineering, best-practices awareness Cultural implications, outsourcing, legal issues, security and how to protect company assets ERP Extensions Supply chain management Customer Relationship Management (CRM)		
Teaching Methodology	The module tutor will deliver live online lectures through Microsoft Teams. During the live lectures the participating students will have the opportunity to engage in discussions, present their views and ask questions. The lecture sessions will be recorded and made available to the students through Blackboard. Students who cannot participate in a live lecture will have the opportunity to answer and reflect on guided questions in the subsequent live lectures or participate asynchronously on discussion boards. The module tutor will provide appropriate feedback to students' comments, as a result of the discussions. Feedback will primarily provided asynchronously through Blackboard, but when the need arises, the module tutor will schedule live sessions to provide further feedback. Where appropriate, students will be also provided with relevant further reading, web links and resources for independent study. Speakers from leading organizations will be invited, where possible, to deliver invited talks and enhance the students' experience. Students will be provided with access to relevant cloud platforms through which they will be able to complete the practical components of the module. The students will obtain the practical sheets from Blackboard and they are expected to follow the instructions included in the practical sheets to complete the lab work. If students have difficulties with a particular exercise, they are expected to contact the module tutor or post a question on the discussion forum, where the module tutor and/or their peers can provide feedback. Different means of communication will be utilized by the tutor to offer		

	support to the students based on the reported issue, i.e. email, Skype, Microsoft Teams, etc.
Bibliography	http://cypruslists.central-lancashire.ac.uk/index.html **Recommended Books** Luvai Motiwalla, Jeffrey Thompson, Enterprise Systems for Management, Second Edition, Pearson Education Limited, 2014, ISBN-10: 1-292-02348-1 • ISBN-13: 978-1-292-02348-9 **Support Books** Simha R. Magal, Jeffrey Word, Integrated Business Processes with ERP Systems, Wiley, 2012, ISBN-13: 978-0-470-47844-8. Mary Summer, Enterprise Resource Planning, Prentice Hall 2005, ISBN-10: 0131403435, ISBN-13: 9780131403437 Ed Peelen, Rob Beltman, Customer Relationship Management, 2/E, Pearson, 2014, ISBN-10: 0273774956, ISBN-13: 9780273774952 Dan Sullivan, Proven Portals: Best Practices for Planning, Designing, and Developing Enterprise Portals: Best Practices for Planning, Designing, and Developing Enterprise Portals, Addison-Wesley, 2003, ISBN-10: 0321125207, ISBN-13: 9780321125200 **ADDITIONAL RELATED INFORMATION, Web Sites AND ARTICLES** http://www-03.ibm.com/solutions/businesssolutions/doc/jsp/indseg/solutionarea/erp/index.jsp http://erpwire.com general information about ERP and ERP vendors http://www.dba-oracle.com/art_insider_erp.htm – information about the vendor selection process http://www.cio.com/topic/1463/ERP – a good general resource for ERP questions and product information http://www.oracle.com/us/products/applications/enterprise-resource-planning/overview/index.html http://www.oracle.com/us/corporate/features/erp-cloud/index.html http://www.sap.com/pc/bp/erp.html http://www.microsoft.com/en-us/dynamics/erp.aspx http://na.sage.com/us/erp http://www.networkworld.com/news/2012/120312-argument-erp-oracle-sap-264572.html

<table>
<tr><td>Assessment</td><td>
<table>
<tr><th>Number of Assessments</th><th>Form of Assessment</th><th>% weighting</th><th>Size of Assessment/Duration/

Wordcount (indicative only)</th><th>Category of Assessment</th><th>Learning Outcomes being assessed</th></tr>
<tr><td>1</td><td>Report and practical portfolio</td><td>50%</td><td>A report of 2000 words</td><td>Coursework</td><td>1, 2,3,4,5</td></tr>
<tr><td>1</td><td>Examination</td><td>50%</td><td>2 hours</td><td>Written Examination</td><td>1, 2,3,4,5</td></tr>
<tr><td colspan="6">To pass this module students must achieve a mark of 50% or above, aggregated across all the assessments.</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Course Title	**e-Marketing**				
Course Code	**CO4609**				
Course Type	**Optional**				
Level	Level 7				
Year / Semester	Year 1 / Semester 2				
Teacher's Name	Christos Karpasitis				
ECTS	10 ECTS	Lectures / week	1h	Laboratories / week	1h
Course Purpose and Objectives	The aim of this module is to provide learners with the skills and knowledge to understand online marketing concepts and techniques together with key factors in implementation, measurement and evaluation of successful campaigns. It aims to provide students with • Confidence and ability to discuss the use of Communication/Web Technologies in Marketing • A sound understanding of both theory and practice of online marketing (referred to as e-marketing) • An ability to make e-marketing decisions using case study material • An appreciation of the practical issues concerned with e-marketing				
Learning Outcomes	On successful completion of this module a student will be able to: 1.Critically appraise different planning approaches and marketing environmental factors that influence online marketing activity 2. Critically analyse, interpret and evaluate the way in which the Internet has changed the marketing mix elements and how they may be employed creatively in digital environment 3. Critically discuss the essential elements of digital campaigns and the link between each technique 4. Develop original and creative responses to marketing problems and issues for a case study organisation				
Prerequisites	NONE	Required	NONE		
Course Content	The module will consider a range of environmental factors both internal and external (e.g. Legal) that shape and influence the e-marketing process. Various e-business models will be explored. In addition, similarities and differences covering the mix elements in traditional and e-marketing will be addressed along with issues such as				

	relationship marketing, permission marketing and consumer concerns around privacy, trust and security. It will place digital marketing in perspective and define a range of e-marketing strategies. The module will also explore a number of topics including the application of digital tools and technologies including but not limited to • Search Engine Marketing • Mobile Marketing • SEO and PPC • Email Marketing • Affiliate Marketing • Social Media, Online PR and Reputation Management • Online Advertising • Analytics
Teaching Methodology	The module tutor will deliver live online lectures through Microsoft Teams. During the live lectures the participating students will have the opportunity to engage in discussions, present their views and ask questions. The lecture sessions will be recorded and made available to the students through Blackboard. Students who cannot participate in a live lecture will have the opportunity to answer and reflect on guided questions in the subsequent live lectures or participate asynchronously on discussion boards. The module tutor will provide appropriate feedback to students' comments, as a result of the discussions. Feedback will primarily provided asynchronously through Blackboard, but when the need arises, the module tutor will schedule live sessions to provide further feedback. Where appropriate, students will be also provided with relevant further reading, web links and resources for independent study. Speakers from leading organizations will be invited, where possible, to deliver invited talks and enhance the students' experience. Online workshops will also be delivered live through Microsoft Teams. During the workshops students will be discussing relevant case studies, related to the theoretical knowledge gained from lectures. Moreover, students will go through processes, tools and technologies related to digital marketing (e.g. Social Media Business Profile Development and Management, Social Media Ads, Google Ads, Google Trends, Online Marketing Campaign Development, Keyword Planning, Meta-tags, Google Analytics and Blog Design and Development) through which they will be able to apply their theoretical knowledge. Students will be provided with different tasks through Blackboard and they will be expected to complete the tasks. If students have difficulties with a particular task, they are expected to contact the module tutor or post a question on the discussion forum, where the module tutor and/or their peers can provide feedback. Different means of communication will be utilised by the tutor to offer support to the students based on the reported issue, i.e. email, Skype, Microsoft Teams, etc.
Bibliography	**Reading List Online:** http://cypruslists.central-lancashire.ac.uk/index.html

<table>
<tr><td></td><td>Additional Resources:

Students are advised to read quality newspapers on a regular basis and to follow developments in consumer affairs and electronic business via the media, as well as reading from electronic books and electronic journals available through online databases on the library web pages. Students will also be expected to use the Internet as a resource for both academic and practical information.</td></tr>
<tr><td>Assessment</td><td>
<table>
<tr><th>Number of Assessments</th><th>Form of Assessment</th><th>% weighting</th><th>Size of Assessment/Duration/

Wordcount (indicative only)</th><th>Category of assessment</th><th>Learning Outcomes being assessed</th></tr>
<tr><td>1</td><td>Individual marketing report</td><td>50%</td><td>2000 words</td><td>Coursework</td><td>1, 3, 4</td></tr>
<tr><td>1</td><td>Examination</td><td>50%</td><td>2 hours</td><td>exam</td><td>2</td></tr>
<tr><td colspan="6">To pass this module students must achieve a mark of 50% or above, aggregated across all the assessments.</td></tr>
</table>
</td></tr>
<tr><td>Language</td><td>English</td></tr>
</table>

Student workload allocation

CO4820

SCHEDULED LEARNING AND TEACHING ACTIVITY	No of hours
Lecture including visiting speakers	26
Tutorial	13
TOTAL SCHEDULED LEARNING HOURS	**39**
GUIDED INDEPENDENT STUDY	
Pre-module reading	13
Pre-class preparation	13
Directed reading	40
Assessment	70
Literature searching	30
Revision & Examination	45
TOTAL GUIDED INDEPENDENT STUDY HOURS	**211**
TOTAL STUDENT LEARNING HOURS	**250**

CO4760

SCHEDULED LEARNING AND TEACHING ACTIVITY	No of hours
Lecture including visiting speakers	13
Tutorial	13
Practical	13
TOTAL SCHEDULED LEARNING HOURS	**39**
GUIDED INDEPENDENT STUDY	
Pre-class preparation	39
Self-assessment quizzes	13
Directed reading	52
Assignment	58
Revision & examination	49
TOTAL GUIDED INDEPENDENT STUDY HOURS	**211**
TOTAL STUDENT LEARNING HOURS	**250**

CO4759

SCHEDULED LEARNING AND TEACHING ACTIVITY	No of hours
Lecture including visiting speakers	13
Tutorial	13
Practical	13
TOTAL SCHEDULED LEARNING HOURS	**39**
GUIDED INDEPENDENT STUDY	
Pre-class preparation	39
Self-assessment quizzes	13
Directed reading	52
Assignment	60
Revision & examination	47
TOTAL GUIDED INDEPENDENT STUDY HOURS	**211**
TOTAL STUDENT LEARNING HOURS	**250**

CO4762

SCHEDULED LEARNING AND TEACHING ACTIVITY	No of hours
Lecture including visiting speakers	20
Practical	19
TOTAL SCHEDULED LEARNING HOURS	**39**
GUIDED INDEPENDENT STUDY	
Pre-class preparation	36
Self-assessment quizzes	13
Directed reading	52
Assignment	60
Revision & examination	50
TOTAL GUIDED INDEPENDENT STUDY HOURS	**211**
TOTAL STUDENT LEARNING HOURS	**250**

CO4761

SCHEDULED LEARNING AND TEACHING ACTIVITY	No of hours
Lecture including visiting speakers	13
Tutorial	13
Practical	13
TOTAL SCHEDULED LEARNING HOURS	**39**
GUIDED INDEPENDENT STUDY	
Pre-class preparation	36
Self-assessment quizzes	13
Directed reading	52
Assignment	60
Revision & examination	50
TOTAL GUIDED INDEPENDENT STUDY	**211**
TOTAL STUDENT LEARNING HOURS	**250**

CO4804

SCHEDULED LEARNING AND TEACHING ACTIVITY *Project preparation via class contact* *Supervision*	**No of hours**
TOTAL SCHEDULED LEARNING HOURS	**25**
GUIDED INDEPENDENT STUDY *Preparation* *Reading and Research* *Project Work* *Writing thesis*	
TOTAL GUIDED INDEPENDENT STUDY HOURS	**725**
TOTAL STUDENT LEARNING HOURS	**750**

CO4512

SCHEDULED LEARNING AND TEACHING ACTIVITY	No of hours
Lecture including visiting speakers	13
Tutorial	13
TOTAL SCHEDULED LEARNING HOURS	**26**
GUIDED INDEPENDENT STUDY	
Pre-module reading	26
Pre-class preparation	26
Directed reading	56
Assignment	64
Revision & examination	52
TOTAL GUIDED INDEPENDENT STUDY HOURS	**224**
TOTAL STUDENT LEARNING HOURS	**250**

CO4519

SCHEDULED LEARNING AND TEACHING ACTIVITY	No of hours
Lectures	13
Tutorials	13
TOTAL SCHEDULED LEARNING HOURS	**26**
GUIDED INDEPENDENT STUDY	
Pre-class preparation – reading class notes, case study notes, further reading	26
Independent reading, Directed reading and research	52
Team-work outside class	50
Assignment work and examination preparation	96
TOTAL GUIDED INDEPENDENT STUDY HOURS	**224**
TOTAL STUDENT LEARNING HOURS	**250**

MD4099

SCHEDULED LEARNING AND TEACHING ACTIVITY	
Seminars	46
Workshops	6
TOTAL SCHEDULED LEARNING HOURS	**52**
GUIDED INDEPENDENT STUDY	
Directed Reading	50
Completion of formative assessment tasks	46
Preparation for class	34
Reflection on feedback	17
Essay preparation	40
Group Report preparation	15
TOTAL GUIDED INDEPENDENT STUDY HOURS	**202**
TOTAL STUDENT LEARNING HOURS	**250**

CO4102

SCHEDULED LEARNING AND TEACHING ACTIVITY	**No of hours**
Lecture	26
Workshop	13
Practical	13
TOTAL SCHEDULED LEARNING HOURS	**52**
GUIDED INDEPENDENT STUDY	
Pre-module reading	13
Pre-class preparation	13
Review and discussion	35
Directed reading	35
Assignment: article and contribution to discussion groups	60
Revision & examination	42
TOTAL INDEPENDENT LEARNING HOURS	**198**
TOTAL STUDENT LEARNING HOURS	**250**

CO4609

SCHEDULED LEARNING AND TEACHING ACTIVITY	No of hours
Lecture	13
Workshops	26
TOTAL SCHEDULED LEARNING HOURS	**39**
GUIDED INDEPENDENT STUDY	
Class preparation and guided reading	57
Researching and assignment writing	77
Group preparation activities	77
TOTAL GUIDED INDEPENDENT STUDY HOURS	**211**
TOTAL STUDENT LEARNING HOURS	**250**