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| **Course Title** | Business Intelligence & Decision Making Systems |
| **Course Code** | TMBA - 140 |
| **Course Type** | This course is a Requirement |
| **Level** | Master (2nd Cycle) |
| **Year/Semester** | Year 1, A’ or B’ Semester |
| **Teacher’s Name** | Dr. Pavlos Evangelides |
| **ECTS** | 6 | **Lectures/weeks** | 3 | **Laboratories/weeks** |  |
| **Course Purpose and Objectives** | This course will assist students in widening their cognitive and professional business knowledge in decision support and business intelligence systems by covering contemporary topics such as text mining, big data analytics, visual data analytics, knowledge management, as well as traditional data warehouse architecture, planning and implementation. Students, as decision - makers, will practically apply the systematic analysis and interpretation of data approach in order to improve their business and operational decisions quality. Therefore, the course examines various dimensions of data and analytics, from a systems approach, in understanding the principles and applications of data concepts that can lead to improved business and management decision-making. Students will examine real - world business cases and examples and develop data oriented thinking and skills that are of great importance to business professionals.Students are expected to:* Understand data analytics, data mining, business intelligence and big data;
* Describe the impact of computing, data availability, and data science methodologies on organizational data-driven approach to decisions and operations;
* Explain and implement the steps involved in the analytics process;
* Recognize the best strategic practices and pitfalls of managing data analytics projects in improving business performance and inform decisions for management, marketing, and other business application areas;
* Gain experience in using data analytics techniques and utilizing software tools for both business intelligence (extracting, cleansing, integrating, visualizing, and reporting data) and data analytics (building descriptive and predictive models);
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| **Learning Outcomes** | Upon completion of this course students will be able to:1. Design and implement decision - making and decision support systems;
2. Describe a set of data using histograms, scatter diagrams and summary statistics;
3. Compute statistics from sample data to support confidence interval estimation, hypothesis testing, regression analysis and use descriptive statistics;
4. Conclude the statistical precision of insights derived from confidence interval estimation, hypothesis testing and regression analysis;
5. Construct effective models of decision making situations using principles of

professional spreadsheet design;1. Compute optimal solutions to decision making models for the management of a wide range of situations in which quantitative analysis improves decision making;
2. Analyze spreadsheet simulation models and decisions with uncertain outcomes by using multiple criteria for optimality and risk via predictive and prescriptive analytics.
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| **Prerequisites** | None | **Required** | Required |
| **Course Content** | 1. Business Intelligence and Decision Making Systems
	1. Decision Support & Analytics
2. Data Warehousing
3. Data Visualization
4. Dashboards and BPM
5. Data Mining
6. Techniques for predictive Modeling
7. Text and Web Analytics
8. Big Data
9. Model based decision making
10. Prescriptive Analytics: Model based decision making
11. Automated Decision Systems / Expert Systems
12. Emerging Trends in Business Analytics
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| **Teaching Methodology** | Faculty members select one or a combination (according to thematic area and expected learning outcomes) of the following teaching methods in order to achieve the learning outcomes of the course: lectures, workshops, seminars, individual or group case-studies and exercises, debates, demonstrations and discussion, educational visits, digital learning, flip learning method, coaching-mentoring, project-based learning method, work-based learning method, presentations by visitors etc. |
| **Mode of delivery** | Face to face |
| **Bibliography** | **Required** |
| Sharda, R., Delen, D. and Turban, E. (2018). Business Intelligence, Analytics, and Data Science: A Managerial Perspective. Pearson; 4th ed.; ISBN-13: 978-0134633282. |
| **Recommended** |
| Power, J. D. and Heavin, C. (2017). Decision Support, Analytics, and Business Intelligence, Third Edition. Business Expert Press; ISBN-13: 978-1631573910.Winston, W. (2019). Microsoft Excel 2019 Data Analysis and Business Modeling (Business Skills). Microsoft Press; 6 ed.; ISBN-13: 978-1509305889 |
| **Assessment** | The following assessment methods are employed to assess this course:

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| 30 – 50 % | Final Exam |
| 20 – 40 % | Mid –Term / Tests / Quizzes |
| 10 – 30 % | Assignments / Projects |
|  0 – 10 % | Class Attendance & Participation |

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| **Language** | English |