

COURSE DESCRIPTION – ACADEMIC YEAR 2023/2024

Course title	Design and Development of Business Software
Course code	76090/47559
Scientific sector	ING-INF/05
Degree	Master in Software Engineering for Information Systems (LM-18); Master in Industrial Mechanical Engineering (LM-33)
Semester	2
Year	1
Credits	6
Modular	No
University	UniBZ

Total lecturing hours	40
Total exercise hours	20
Attendance	Recommended
Prerequisites	None
Course page	https://ole.unibz.it/

Specific educational objectives	<p>The course belongs to the type “affine o integrative” and is part of Advanced Topics in Software / Systems Engineering.</p> <p>The course belongs to the scientific area of Management Engineering and is focused on Business Intelligence and Enterprise Resource Planning Systems. It represents one of the related topics (affine/verwandt) for the study programme on Software Engineering for Information Systems.</p> <p>The course gives a general overview of the scientific basics of business and its objectives as well as the role software can play in it. During the course, the business application of the presented theoretical topics will be integrated by means of targeted application-oriented exercises and cases concerning the business environment, especially the manufacturing sector, and the data analysis of data produced by these processes through business intelligence tools.</p> <p>The learning objectives are to introduce students in the fundamentals of business software and business data analysis. Based on this, decision making and operational tools such as Business Intelligence and Enterprise Resource Planning Systems are discussed in detail alongside presentations of their real-world application in business. The students should acquire the competence to understand and evaluate business problems and outline an appropriate design for a business analytical solution to address the problem in terms of decision support or operational improvements in the manufacturing sector.</p>
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Lecturer	<u>Andrea Molinari</u>
Contact LA	
Scientific sector of lecturer	
Teaching language	English
Office hours	TBA, arranged beforehand by email.
Lecturing Assistant	

Contact LA	--
Office hours LA	--
List of topics	<ul style="list-style-type: none"> • Introduction to Business Software • Modelling business process • Enterprise applications: ERP, CRM, SCM • Transactional systems (OLTP) for business processes • Systems for small/medium business • The use of BI in Business software • Business intelligence dashboards and online analytic processing (OLAP)
Teaching format	Frontal lectures, case studies presentation and exercises
Learning outcomes	<p>Knowledge and understanding:</p> <p>D1.2 To be able to analyze and solve even complex problems in the area of Software Engineering for Information Systems with particular emphasis on the use of studies, methods, techniques and technologies of empirical evaluation;</p> <p>D1.4 To know in depth the principles, structures and use of computer systems for the automation of information systems;</p> <p>D1.8 To be able to read and understand specialist scientific documentation, such as conference proceedings, articles in scientific journals, technical manuals.</p> <p>Applying knowledge and understanding:</p> <p>D2.3 To know how to apply the principles of software engineering to domains of different complexity, both IT and non-IT, in which software technology is of great importance, such as, for example, in the transport sector or in the medical field;</p> <p>Making judgments:</p> <p>D3.1 To be able to autonomously select documentation from a variety of sources, including technical books, digital libraries, technical scientific journals, web portals or open source software and hardware tools;</p> <p>Communication skills:</p> <p>D4.6 To be able to interact and collaborate during the implementation of a project or research with peers and experts;</p> <p>Learning skills:</p> <p>D5.3 In the context of a problem solving activity, to be able to extend knowledge, even if incomplete, taking into account the final objective of the project;</p>
Assessment	<p>The assessment is based on two components:</p> <ol style="list-style-type: none"> 1) A written exam consisting of open questions on the theoretical material provided by the lecturer;

	2) A practical exam on the lab parts on Business Intelligence analysis.
Assessment language	English
Assessment typology	Monocratic commission
Evaluation criteria and criteria for awarding marks	<p>The final mark is the sum of the scores of the different parts of the summative assessment (presentation and exam)</p> <p>The assessment is based on</p> <ol style="list-style-type: none"> 1) Laboratory exercise (50%) 2) Written Exam (50%)
Required readings	<p>Subject Librarian: David Gebhardi, David.Gebhardi@unibz.it</p> <ul style="list-style-type: none"> • Lecture slides and notes • Lab exercise slides and notes
Supplementary readings	<ul style="list-style-type: none"> • Laudon, J. P, Laudon, K. C., (2018): Management Information Systems: managing the digital firm, 15th ed., Pearson Education, Upper Saddle River. • Magal, R. S., Word, J. (2009): Essentials of business processes and information systems, Wiley, New York. • Rainer, R. K., Watson, H., (2016): Management information systems: moving business forward, 4th ed., Wiley, Chichester. • Sauter, V. L., (2011): Decision support systems for business intelligence, 2nd ed., Wiley, Hoboken
Software used	- Software for Business analysis available for any computer or through the use of the virtualization service provided by Unibz (VMWare Horizon)