Syllabus

Kursbeschreibung

Titel der Lehrveranstaltung	Modeling and Databases with Project
Code der Lehrveranstaltung	76445
Zusätzlicher Titel der Lehrveranstaltung	
Wissenschaftlich-disziplinärer Bereich	
Sprache	Englisch
Studiengang	Bachelor in Wirtschaftsinformatik
Andere Studiengänge (gem. Lehrveranstaltung)	
Dozenten/Dozentinnen	Prof. Marco Montali, marco.montali@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/31326 Prof. Davide Lanti, Davide.Lanti@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/34107
Wissensch. Mitarbeiter/Mitarbeiterin	Dott. Albulen Pano
Semester	Zweites Semester
Studienjahr/e	1
KP	12
Vorlesungsstunden	80
Laboratoriumsstunden	40
Stunden für individuelles Studium	180
Vorgesehene Sprechzeiten	36
Inhaltsangabe	- Introduction to Business Process Management - Data modeling - Descriptive process modeling

	- Analytic process modeling - Decision modeling - Relational Model - Query languages (relational algebra and SQL) - Query management - Database design - Building database applications - NoSQL and large-scale data management
Themen der Lehrveranstaltung	Students attending this course will study and put into practice languages, methodologies, and techniques for modelling data, business processes and decisions that are instrumental to the creation of information systems supporting contemporary organizations in their operations management. In addition, they will be able to translate a data model into a corresponding database, and learn how to make use of the basic functionalities (definition, update, and querying) of database management systems in the context of development and deployment of information systems. The course focuses specifically on relational databases, the SQL language, and software programs accessing them, but the taught methods and principles are of a more general nature, and can be applied also in those contexts where data models and database systems different from relational ones are adopted.
Stichwörter	data modelling process modelling databases SQL Entity-Relationship Diagrams BPMN
Empfohlene Voraussetzungen	Students should have a solid mathematical foundation and be familiar with the basic programming concepts.
Propädeutische Lehrveranstaltungen	
Unterrichtsform	Frontal classroom lectures plus exercises.
Anwesenheitspflicht	Not compulsory. Non-attending students should contact the lecturers at the beginning of the course in order to get indications on how to best

	follow the course.
Spezifische Bildungsziele und erwartete Lernergebnisse	The course belongs to the type "attività formative di base – formazione informatica di base". Students attending this course will study and put into practice languages, methodologies, and techniques for modelling data, business processes and decisions that are instrumental to the creation of information systems supporting contemporary organizations in their operations management. In addition, they will be able to translate a data model into a corresponding database, and learn how to make use of the basic functionalities (definition, update, and querying) of database management systems in the context of development and deployment of information systems. The course focuses specifically on relational databases, the SQL language, and software programs accessing them, but the taught methods and principles are of a more general nature, and can be applied also in those contexts where data models and database systems different from relational ones are adopted. Knowledge and understanding: - D1.4 - Understand the key principles and modeling structures of data and processes. - D1.5 - Know the main foundations of relational database systems and methods of designing, developing and optimising such systems. Applying knowledge and understanding: - D2.4 - Ability to formalise and to analyse procedures and operational processes, to recognise and use optimisation potentials. - D2.7 - Ability to plan and use access to (relational) databases. Communication skills - D4.5 - Ability to collaborate in interdisciplinary teams to achieve IT objectives. Learning skills - D5.3 - Ability to follow rapid technological developments and to learn about innovative aspects of the latest generation of information technology and systems.
Spezifisches Bildungsziel	

und erwartete Lernergebnisse (zusätzliche Informationen)	
Art der Prüfung	- Project work to test knowledge application skills and communication skills, done in small groups to present their work written and orally. - Written exam with verification questions and questions to test knowledge application skills.
Bewertungskriterien	- 40% project work - 60% written exercises Relevant for assessment of Module 1: ability to work in teams, skill in applying knowledge in a practical setting, ability to summarize in own words. Relevant for assessment of Module 2: clarity of answers, ability to recall principles and methods used in database systems, skill in applying knowledge such as developing and querying databases.
Pflichtliteratur	• Raghu Ramakrishnan, Johannes Gehrke. Database Management Systems. 3rd edition. McGraw-Hill, 2005. • Dumas, M., La Rosa, M., Mendling, J. and Reijers, H. A.: Fundamentals of Business Process Management (II edition). Springer, 2018. Subject Librarian: David Gebhardi, David.Gebhardi@unibz.it
Weiterführende Literatur	
Weitere Informationen	Software used: PostgreSQL Database Management System
Ziele für nachhaltige Entwicklung (SDGs)	Hochwertige Bildung

Kursmodul

Titel des Bestandteils der Lehrveranstaltung	Data and Process Modeling for Busines Informatics
Code der Lehrveranstaltung	76445A

Wissenschaftlich-disziplinärer Bereich	IINF-05/A
Sprache	Englisch
Dozenten/Dozentinnen	Prof. Marco Montali, marco.montali@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/31326
Wissensch. Mitarbeiter/Mitarbeiterin	
Semester	
KP	6
Verantwortliche/r Dozent/in	
Vorlesungsstunden	40
Laboratoriumsstunden	20
Stunden für individuelles Studium	90
Vorgesehene Sprechzeiten	18
Inhaltsangabe	- Introduction to Business Process Management - Data modeling - Descriptive process modeling - Analytic process modeling - Decision modeling
Themen der Lehrveranstaltung	
Unterrichtsform	Frontal classroom lectures plus exercises.
Pflichtliteratur	• Raghu Ramakrishnan, Johannes Gehrke. Database Management Systems. 3rd edition. McGraw-Hill, 2005. • Dumas, M., La Rosa, M., Mendling, J. and Reijers, H. A.: Fundamentals of Business Process Management (II edition). Springer, 2018. Subject Librarian: David Gebhardi, David.Gebhardi@unibz.it
Weiterführende Literatur	

Kursmodul

Titel des Bestandteils der Lehrveranstaltung	Introduction to Databases for Business Informatics
Code der Lehrveranstaltung	76445B
Wissenschaftlich-disziplinärer Bereich	IINF-05/A
Sprache	Englisch
Dozenten/Dozentinnen	Prof. Davide Lanti, Davide.Lanti@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/34107
Wissensch. Mitarbeiter/Mitarbeiterin	Dott. Albulen Pano
Semester	
KP	6
Verantwortliche/r Dozent/in	
Vorlesungsstunden	40
Laboratoriumsstunden	20
Stunden für individuelles Studium	90
Vorgesehene Sprechzeiten	18
Inhaltsangabe	- Relational Model - Query languages (relational algebra and SQL) - Query management - Database design - Building database applications - NoSQL and large-scale data management
Themen der Lehrveranstaltung	
Unterrichtsform	Frontal classroom lectures plus exercises.
Pflichtliteratur	• Raghu Ramakrishnan, Johannes Gehrke. Database Management Systems. 3rd edition. McGraw-Hill, 2005.

	• Dumas, M., La Rosa, M., Mendling, J. and Reijers, H. A.: Fundamentals of Business Process Management (II edition). Springer, 2018. Subject Librarian: David Gebhardi, David.Gebhardi@unibz.it
Weiterführende Literatur	