COURSE OF STUDY: Patrimonio Digitale. Musei, Archivi, Biblioteche
ACADEMIC YEAR: 2023-2024
ACADEMIC SUBJECT: Modelli dei dati / Data modeling

General information	
Year of the course	*First Year*
Academic calendar (starting and ending date)	Second Semester
Credits (CFU/ETCS):	6 CFU
SSD	ING-INF/05
Language	Italian
Mode of attendance	Optional

Professor/ Lecturer	
Name and Surname	Gianvito Pio
E-mail	gianvito.pio@uniba.it
Telephone	+39 080 5442283
Department and address	Department of Computer Science – Fifth Floor – Room 571
Virtual room	-
Office Hours (and modalities: e.g., by appointment, on line, etc.)	Wednesday 14.00 - 16.00, by appointment. Please send an email to the professor some days before to ask for confirmation.

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
150	42		108
CFU/ETCS			
6	6		

Learning Objectives	Acquisition of adequate knowledge of the data models used for the conceptual and logical design of a database. Acquisition of competence in the SQL language and the DBMS Microsoft Access.
Course prerequisites	None

Teaching strategies	Frontal lessons conducted with the support of slides and practical classroom exercises.
Expected learning outcomes in terms of	
Knowledge and understanding on:	o Acquisition of knowledge relating to structured data modeling. o Ability to understand models for structured data
Applying knowledge and understanding on:	o Ability to design and create simple databases
Soft skills	• Autonomy of judgement o Students are able to appreciate data modeling and independently develop simple databases from specifications.

	o Independent judgment is acquired through the study and critical interpretation of texts and the use of simple DBMS. o The achievement of adequate autonomy is verified through the final exam. • Communication skills Students are able to explain the topics included in the course program using the specific vocabulary of the discipline. • Ability to learn independently Students are able to independently explore the topics included in the course program even using resources not directly involved in the provision of lesson hours.
Syllabus	

Content knowledge	• Introduction to the concepts of information systems, data and information, databases and database management systems, data models, languages and users of databases
	• The relational model
	  - relations, attributes, tables
	  - integrity constraints
	• The SQL language
	  - Data definition
	  - Queries
	• Methodologies and models for the project
	  - Introduction to database design
	  - The entity-relationship model
	• Conceptual design
	  - Collection and analysis of requirements
	  - Conceptual representation of data
	  - A general methodology
	• Logical design
	  - Logical design phases
	  - Restructuring of the scheme
	  - Translation towards a relational model
	• The Microsoft Access DBMS

Texts and readings	Paolo Atzeni, Stefano Ceri, Piero Fraternali, Stefano Paraboschi, Riccardo Torlone – Basi di dati (5a edizione), McGraw Hill, 2018
Notes, additional materials	-
Repository	The slides presented in class and additional material will be made available on the UNIBA e-learning platform: https://elearning.uniba.it/

Assessment	
Assessment methods	Oral test with assessment of the theoretical-technical skills acquired, integrated with a practical test on the development of a simple database and its query.
Assessment criteria	• Knowledge and understanding Critical exposition of the concepts learned relating to data models and database design • Applied knowledge and understanding Development and query of a simple database • Autonomy of judgement Ability to carry out simple exercises assigned during the lessons

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	• Communication skills Use of specific vocabulary of the IT discipline • Ability to learn Development of topics on data models not directly covered in the course but assigned by the teacher
Final exam and grading criteria	The final grade will be assigned on the basis of the evaluation of all the criteria mentioned above
Further information	