

Module Title:	Database Systems
Level:	5
Reference Code:	BIF-5-BDS
Credits:	20
Student Study Hours:	Total: 200 Contact hours: 65 Student managed learning hours: 135
Pre-Requisites:	None
Co-requisites:	None
Excluded combinations:	None
Module coordinator:	Aziz Ait-Braham
Division:	Division of Computer Science and Informatics
Short Description:	The database is now the underlying framework of the information system and has fundamentally changed the way companies, organisations and individuals alike work. This module covers the fundamentals of the database field. The subject of the database field is concerned with how to use computers to store and manage data, usually large quantities of data. This is, first and foremost, an introductory module to database management systems.
Aims:	The study of databases is typically a core area in undergraduate and postgraduate programmes related to computer science and information technology and systems. This module will aim to provide you with an understanding of various database issues such as database management, data modelling, relational database theory, data integrity and security, and the database query language SQL (Structured Query Language). In addition, the module will also introduce you to some of the intermediate aspects of databases such as XML, object-relational databases, procedures, triggers, web databases.
Learning Outcomes:	<p>Knowledge and Understanding. You will be able to:</p> <ul style="list-style-type: none"> Critically discuss a broad range of data management issues including data administration, integrity and security. <p>Intellectual Skills. You will be able to:</p> <ul style="list-style-type: none"> Appreciate the continuing development of database technologies and applications and the need for continued study, reflection, and development throughout a career as a database professional. <p>Practical Skills. You will be able to:</p> <ul style="list-style-type: none"> Design, implement and query database applications. <p>Transferable Skills. You will be able to:</p> <ul style="list-style-type: none"> Develop skills for autonomous practice, including oral and written communication skills.
Employability:	Data and databases are the blood of every organisation, enterprise or business. Acquiring skills and being able to demonstrate competence in the area of databases therefore clearly improves your chances of gaining and retaining good employment opportunities.

Teaching and Learning Pattern:	The module will be a mixture of lectures, classroom discussions, and work in the laboratories. The weekly contact time may consist of a lecture followed by exercises and activities. A constructivist approach will be used: the bulk of the learning will be done and achieved through practical and lab-based activities. You will be expected to read through the texts, to participate in the classroom discussions, and to work through the assigned exercises and activities.
Indicative Content:	<p>The areas which will be covered include:</p> <ul style="list-style-type: none"> • An introduction to databases • Data analysis and data modelling • Conceptual and logical design • The entity relationship model • The relational data model • Relational database management systems • SQL and other database languages • Some other intermediate aspects of databases such as web databases, triggers, procedures
Assessment:	<p>Exam 40% : Coursework 60%</p> <p>The module will be assessed through an exam (40%) and coursework (60%). The coursework will be a mixture of individual assessment activities (e.g., in-class phase tests) and a practical assignment (e.g., group-based project). Each individual assessment activity will be on a segment of the module. These activities will be used as both summative and formative assessments. They are designed to build your skill set before you embark on the more substantive practical assignment. Even though the practical assignment may be a group based piece of coursework, there will be close scrutiny given to individual contributions and mechanisms will be put in place to assess each group member's contribution.</p>
Indicative Sources:	<p>Core:</p> <ul style="list-style-type: none"> • Kroenke, D.M. and Auer, D.J. (2013) <i>Database Concepts</i>, International Ed., Pearson Education. <p>Background:</p> <ul style="list-style-type: none"> • Connolly, T. & Begg, C. (2010) <i>Database Systems: A Practical Approach to Design, Implementation and Management</i>, 5e, Addison-Wesley. • Elmasri, R. and Navathe, S.B. (2011) <i>Database Systems: Models, Languages, Design, and Application Programming</i>, Global Ed., Pearson Education.