# H06ID: Introduction to Databases

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|---|---|
| **Module Code:** | H06ID |
| **Long Title** | Introduction to Databases APPROVED |
| **Title** | Introduction to Databases |
| **Module Level:** | LEVEL 6 |
| **EQF Level:** | 5 |
| **EHEA Level:** | Short Cycle |
| **Credits:** | 5 |
| **Module Coordinator:** | PAUL HAYES |
| **Module Author:** | PAUL HAYES |
| **Departments:** | School of Computing |
| **Specifications of the qualifications and experience required of staff** | |

| Learning Outcomes | |
|---|---|
| *On successful completion of this module the learner will be able to:* | |
| **#** | **Learning Outcome Description** |
| LO1 | Identify and analyse current trends in database systems |
| LO2 | Describe and apply data model concepts |
| LO3 | Comprehend and evaluate the relational database concept |
| LO4 | Design, implement and administer a database system with an appropriate database package |
| LO5 | Formulate advanced SQL commands to manipulate the structure of a database and its contents |

| Dependencies |
|---|
| ***Module Recommendations*** |
| No recommendations listed |
| ***Co-requisite Modules*** |
| No Co-requisite modules listed |
| ***Entry requirements*** |

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## Module Content & Assessment

### Indicative Content

**Introduction to Databases (15%)**
Introduction to Databases Traditional File-Based Systems The history of Database Management Systems Roles in the Database Environment Functions of a DBMS Components of a DBMS Advantages and Disadvantages of Database Management Systems DBMS Selection Data Administration and Database Administration The Web as a Database Application Platform Hierarchical, Network and Object-Oriented Data Models Relational versus Non-Relational

**The Relational Model (15%)**
Introduction to the Relational Model Properties of Database Tables Integrity Constraints Views When is a DBMS Relational?

**Database Planning, Design, and Administration (10%)**
Overview of the Information Systems Lifecycle The Database Application Lifecycle Overview of Database Design. Application Design

**Data Modelling (10%)**
Introduction to data modelling The Concepts of the Entity-Relationship Model Structural Constraints The Enhanced Entity-Relationship Model Guidelines for a well-formed E-R diagram Converting from conceptual data model to logical data model Deriving relations from logical data model

**Normalisation (10%)**
The Purpose of Normalisation Data Redundancy and Update Anomalies Functional Dependencies The Process of Normalisation First, Second and Third Normal Forms Boyce-Codd Normal Form (BCNF) Higher Normal Forms Denormalisation impact and strategies

**SQL: Structured Query Language (25%)**
Introduction to SQL Evolution of SQL Writing SQL Commands Data Definition Language • Data Manipulation

**Advanced SQL Features (15%)**
Introduction SQL Access Control: authorisations in SQL, system and user privileges, granting and revoking privileges Views Integrity Enhancement Features of SQL Advanced Data Definition

| Assessment Breakdown | % |
| --- | --- |
| Coursework | 50.00% |
| End of Module Assessment | 50.00% |

**Assessments**

## Full Time

### Coursework

| | | | |
| --- | --- | --- | --- |
| **Assessment Type:** | Test One | **% of total:** | 20 |
| **Assessment Date:** | Week 6 | **Outcome addressed:** | 1,2,3 |
| **Non-Marked:** | No | | |
| **Assessment Description:** n/a | | | |

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| --- | --- | --- | --- |
| **Assessment Type:** | Assignment | **% of total:** | 5 |
| **Assessment Date:** | Week 8 | **Outcome addressed:** | 4 |
| **Non-Marked:** | No | | |
| **Assessment Description:** n/a | | | |

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| --- | --- | --- | --- |
| **Assessment Type:** | Test Two | **% of total:** | 25 |
| **Assessment Date:** | Week 11 | **Outcome addressed:** | 5 |
| **Non-Marked:** | No | | |
| **Assessment Description:** n/a | | | |

### End of Module Assessment

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| --- | --- | --- | --- |
| **Assessment Type:** | Terminal Exam | **% of total:** | 50 |
| **Assessment Date:** | End-of-Semester | **Outcome addressed:** | 1,2,3,4,5 |
| **Non-Marked:** | No | | |
| **Assessment Description:** End-of-Semester Final Examination | | | |

No Workplace Assessment

### Reassessment Requirement

**Repeat examination**
*Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.*

# H06ID: Introduction to Databases

| Module Workload | | | | |
|---|---|---|---|---|
| **Module Target Workload Hours 0 Hours** | | | | |
| **Workload: Full Time** | | | | |
| *Workload Type* | *Workload Description* | *Hours* | *Frequency* | *Average Weekly Learner Workload* |
| Lecture | No Description | 2 | Every Week | 2.00 |
| Lab | No Description | 1 | Every Week | 1.00 |
| Independent Learning | No Description | 7.5 | Once per semester | 0.63 |
| | | | Total Weekly Contact Hours | 3.00 |
| **Workload: Part Time** | | | | |
| *Workload Type* | *Workload Description* | *Hours* | *Frequency* | *Average Weekly Learner Workload* |
| Lecture | No Description | 24 | Every Week | 24.00 |
| Lab | No Description | 12 | Every Week | 12.00 |
| Independent Learning | No Description | 89 | Once per semester | 7.42 |
| | | | Total Weekly Contact Hours | 36.00 |

## Module Resources

### Recommended Book Resources

Thomas Connolly, Carolyn Begg. (2014), Database Systems: A Practical Approach to Design, Implementation, and Management, 6th Edition. Pearson Education, [ISBN: 1292061189].

Carlos Coronel, Stephen Morris, Peter Rob and Keeley Crocket. (2013), Database Principles, 2nd Edition. CENGAGE Learning, [ISBN: 140806636].

### Supplementary Book Resources

Abraham Silberschatz, Henry F. Korth, S. Sudarshan. (2010), Database System Concepts, 6th Edition. McGraw Hill Higher Education, p.1152, [ISBN: 0071289593].

Ramez Elmasri and Shamkant Navathe. (2013), Fundamentals of Database Systems, 6th Edition. Pearson Education, [ISBN: 1292025603].

C.J. Date. (2012), Database Design and Relational Theory, O'Reilly Media, p.278, [ISBN: 1449328016].

Larry Rockoff. (2010), The Language of SQL, Course Technology PTR, p.240, [ISBN: 143545751X].

*This module does not have any article/paper resources*

*This module does not have any other resources*

**Discussion Note:**