# **Solent University Unit Descriptor**

**Unit Code:** COM519 **Unit title: Advanced Database Systems**

### **Why is this unit important?**

Databases form the backbone to the majority of business applications where they are routinely used to manage large quantities of data and a single database may cater for the different needs of many diverse user groups. Enterprise-level database management systems therefore need to provide the facilities to handle such requirements.

**What you will learn on the unit**

The unit will provide you with an understanding of the issues involved and how they are addressed using modern enterprise database management systems. We will research novel database management systems such as NoSQL databases but also continue more advanced relational databases by using object relational mapping libraries.

Amongst other things you will cover:

* Design and development of Relational databases
* NoSQL databases
  + Key value stores
  + Document databases
  + Columnar and graph stores
* Object relational mapping libraries
* Programming with databases

**How you will learn**

Each week you will attend formal and fun lectures which provide a background on the week's topic. You will then apply this knowledge in a practical lab-based session.

**How much time the unit requires**

For a 20 credit unit, you are expected to study for 200 hours (which equates to 10 hours per credit). This total learning time is made up of contact time, directed learning tasks, independent study and assessment activity. Your tutor will offer you guidance on how you should best manage your study time on this unit

### **How you will be assessed**

#### **Tasks which help you learn and prepare you for summative tasks (formative):**

Weekly exercises with given solutions initiated in class, either individual or in groups will prepare you for the assignment.

#### **Tasks which count towards your degree (summative):**

The assignment consists of creating an industrial database, this may be for a vehicle or a machine. You will work in groups to elicit the requirements, design an ERD, create the database and populate it with data. The database also consists of functions and triggers and necessary controls using a programming language.

You will submit a portfolio evidencing the work that you and your group have done – this will be worked on as a team.  
You will also submit a report that you will work on individually. This will detail your own individual contribution to the project

## **When assessment does not go to plan:**

You will be able to submit your work at a later stage for resubmission and will be given additional support.

### **What you will be able to do after the unit:**

1. Discuss a range of approaches and techniques for addressing the issues facing modern enterprise-level databases.
2. Evaluate and design database solutions based on an analysis of business requirements.
3. Research novel database management systems.
4. Apply database application development techniques.
5. Evaluate issues concerning the legal and ethical requirements of secure databases.
6. Collaborate with others on a database development project

### How this relates to the dimensions of Solent’s Real-world curriculum framework

|  |  |  |
| --- | --- | --- |
| Dimensions | How students learn | How students are assessed |
| Students experience an intellectually stimulating curriculum which inspires them to learn for life | Students learn of the value of database design and development | The assignment will challenge the students' knowledge and understanding |
| Students face outward to the community, industry and the global environment | Students learn about the legal requirements of databases and the ethical use of data | Legal and ethical considerations will be incorporated within the assignment |
| Students learn from authentic, engaging and programmatic assessment | Working as part of a collaborative team, students engage and develop learning and understanding | Students produce a team software model |

### **Summative assessment details**

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| --- | --- | --- |
| AE1 | Weighting: | 100% |
|  | Assessment type: | Group project with individual reports |
|  | Aggregation: | N/A |
|  | Length/duration: | 2000 words plus software model and artefact |
|  | Online submission: | Yes |
|  | Grade marking: | Yes |
|  | Anonymous marking: | No |

Unit Author: Dr. Cédric Mesnage

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| --- | --- | --- | --- |
| Unit Title: Advanced Database Systems | | | |
| Credit Points: | 20 | Unit Code: | COM519 |
| FHEQ Level: | 5 | School/Service | SMAT |
| Unit Delivery Model: | CD | Max/Min student numbers | Not Applicable |
| Unit Leader: | Dr. Cédric Mesnage | | |
| HECOS Code | 100754 | | |

### **Unit change history:**

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| --- | --- | --- | --- |
| Unit Approved/Year Implemented/Code | July 2019 | 2020/21 | COM519 |
| Unit modified/Year Implemented/Code |  |  |  |
| Add extra rows as required |  |  |  |