



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

LEVEL/ LEFEL : 4

MODULE CODE/ COD Y MODIWL: ACCC4004
INFORMATION ENGINEERING

ASSESSMENT TYPE/ MATH O ASESU: ASSIGNMENT

ASSESSMENT/COMPONENT/ ASESAD/CYDRAN: 2

COMPONENT WEIGHTING/ PWYSAU'R CYDRAN: 70 %

WORD COUNT/ NIFER Y GEIRIAU: N/A

SUBMISSION DETAILS/ MANYLION CYFLWYNO:

- All files of the website and the database should be zipped and submitted electronically to Moodle.



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

BACHELORS DEGREE ASSIGNMENT SPECIFICATION (SOAC)

Programme:	BSc Cloud Computing		
Assignment Title:	Information Engineering		
Hand Out Date:	2 nd Week of Term	Submission deadline:	Please refer to the assessments schedule published on Students' Hall in Moodle and the Assessment Board on campus

• Referencing:	In the main body of your submission you must give credit to authors on whose research your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have read or quoted in order to complete this assignment (e.g. for books: surname of author and initials, year of publication, <u>title of book</u> , edition, publisher: place of publication).
-----------------------	---

Late submission will result in a late penalty mark, as follows:

Up to one week late, maximum mark of 40% for first attempts and 0% for resubmissions. No work will be accepted more than one week after the submission deadline
(Academic Quality Handbook 2016/17 7.5 (5))

AIM(S)

- To introduce the student to the underlying concepts of systems analysis and design of computer-based systems with an emphasis on requirements analysis. This continues through to the analysis of data. Database design techniques are studied and used to translate theoretical skill into practical applications.

Learning Outcomes tested (from module syllabus)	Assessment Criteria To achieve each outcome a student must demonstrate the ability to:
- Produce systems specifications and use them appropriately in the development of a database design model. - Produce a database solution that involves problem solving techniques to create a prototype application.	Database design and entity analysis techniques. Select suitable data types, entity and reverential constrains. Database implementation using suitable DBMS software.

Assessment Summary

Activity type	Percentage
Written	0%
Coursework	70%
Practical	30%
TOTAL	100%

ASSESSMENT

Coursework -70% of the Module

TASK DESCRIPTION

Universal Sports is a national sports and fitness company with over 60 members of staff. Universal Sports has 6 branches throughout the country. The Head Office is located Birmingham where all the personnel data is stored. The Personnel Director and one other member of the administrative staff deal with personnel data. (Universal Sports has a separate database which deals with the members of the club).

Universal Sports need a computerised personnel system that will be able to produce reports on all aspects relating to the staff of the company. For example, length of service profile, age profile, gender profile, courses attended etc. Now the information on the staff is currently held in a paper-based system which means that the maintenance and updating of the manual records system is very labour intensive. It is also difficult to analyse the information from the manual system and as a result the statistical output of the company is limited which in turn affects decision making. The information which is manually stored is in a variety of different files, for example sick pay, holidays files and it is therefore time consuming to provide a single, comprehensive picture of one employee. Universal Sports hope that a computerised system will enable them to quickly produce employee profiles and to quickly produce the necessary statistical analysis on the employee data.

Therefore, the main use of the proposed system is to keep employee records. All personnel information currently stored manually will be transferred onto the computerised system. The staff in the company is in three main job types of; casual staff, fitness instructors and swimming pool attendants. Casual staff does not have a holiday entitlement. The following is a list of the

Member of Staff's Personal Data:

- Name, address, telephone number, date of birth
- Staff code (unique 3 digit number)
- Sex
- Marital Status
- National Insurance Number (unique number)
- Title
- Bank details (Bank name, sort code, account number (for paying in salary))

Member of Staff's Data relating to the Company: (applicable to all staff unless otherwise stated)

- Date of joining the company
- Date the terms and conditions were issued
- Current Salary
- Medical details
- Past and present branches worked at with dates (not casual staff)
- Absence Record (start date and the end date of each absence with reason for absence)
- Emergency contact name, address and telephone number (staff can have up to three emergency contact numbers).
- First aider (member of staff is a first aider if they have ever held a first aid certificate).

- First aid expiry date and the number of years spent as a qualified first aider
- Normal hours of work for each member of staff
- Holiday entitlement – expressed in days (not casual staff)
- Training courses attended (date, course and comments- not casual staff)
- Branch code where the employee currently works (all staff)
- Branch name

Task 1

You must use design techniques that you have been looking at to develop a suitable solution for the above scenario.

- An Entity Relationship Diagram Showing:
 - Entities
 - Relationships
 - Degree of Relationships
 - Membership Class
 - Annotated descriptions for each relationship

Documentation

Provide evidence that the tables will link together in a relational database environment.

Apply suitable data analysis and design techniques to create a logical design.

- Suitable tables created
- Suitable fields created
- Suitable foreign keys created
- Suitable relationships created
- Tables relate together correctly
- Verify the design meets user requirements
- Table design meets the rules of third normal form.
- Use references to books, journals, notes and web material used in the completion of the assignment
- Use Microsoft Visio or StarUML to produce final Entity Relationship Diagram (ERD) to document the tables. Justify any assumptions that you have made.

Task 2

You are required to implement a database to meet the requirements of the **Universal Sports** Database system using the Entity Relationship Model that you have developed. The system should contain the following:

- Tables (Your table design should follow the ER diagram provided but you may wish to add additional attribute field to enhance the design)
- Forms
- Queries
- Reports
- Relationships

Documentation

- Front page with name, topic etc.
- Screen Capture from the Relationship Diagram
- Output from all reports
- Screen Capture for each form used

- Evidence of Queries
- Brief user guide

Guide to Successful implementation of assignment requirements:

<u>Initial design</u> ▪ Tables successfully created ▪ Appropriate relationships between table ▪ Tables populated with suitable data ▪ Appropriate menus created ▪ Appropriate forms created ▪ Appropriate reports created ▪ Query produced from a single table
<u>Implementation of Successful Querying and use of SQL</u> ▪ Create relationships using SQL ▪ Add records to tables using SQL ▪ Create a relationship (Foreign Key) using SQL ▪ Produce a Report from a query ▪ Main Menus and form navigation work together correctly
<u>Use of additional MS-Access functionality</u> ▪ Produce calculation in a report ▪ Produce Master and Embedded forms ▪ Menus are displayed immediately after the database opens
<u>Documentation</u> Provide suitable user documentation and description of the database function

Please discuss with your Lecturer the specific requirements for this submission.

MARKING CRITERIA – ASSIGNMENT TWO

This section details the assessment criteria. The *extent* to which these are demonstrated by you determines your mark. The marks available for each criterion are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement.

Common Assessment Criteria Applied		Marks available
1. Knowledge and Understanding of Subject Extent of knowledge and understanding of concepts and underlying principles associated with the discipline.		
Suitable development methods employed and justified.		25
2. Analysis Analysis, evaluation and synthesis; logic, argument and judgement; analytical reflection; organisation of ideas and evidence		
Provide evidence that the tables will link together in a relational database environment.		20
3. Practical Application and Deployment Deployment of methods, materials, tools and techniques; application of concepts; formulation of innovative and creative solutions to solve problems.		
Successful demonstration of software implementation		45
4. Skills for Professional Practice Attributes in professional practice: individual and collaborative working; deployment of appropriate media; presentation and organisation.		
All work suitable presented and referenced.		10

COMMON ASSESSMENT AND MARKING CRITERIA

	OUTRIGHT FAIL	UNSATISFACTORY	SATISFACTORY	GOOD	VERY GOOD	EXCELLENT	EXCEPTIONAL
Assessment Criteria	0-29%	30-39%*	40-49%	50-59%	60-69%	70-79%	80-100%
1. Research-informed Literature Extent of research and/or own reading, selection of credible sources, application of appropriate referencing conventions	Little or no evidence of reading. Views and findings unsupported and non-authoritative. Referencing conventions largely ignored.	Poor evidence of reading and/or of reliance on inappropriate sources, and/or indiscriminate use of sources. Referencing conventions used inconsistently.	References to a limited range of mostly relevant sources. Some omissions and minor errors. Referencing conventions evident though not always applied consistently.	Inclusion of a range of research-informed literature, including sources retrieved independently. Referencing conventions mostly consistently applied.	Inclusion of a wide range of research-informed literature, including sources retrieved independently. Selection of relevant and credible sources. Very good use of referencing conventions, consistently applied.	A comprehensive range of research informed literature embedded in the work. Excellent selection of relevant and credible sources. High-level referencing skills, consistently applied.	Outstanding knowledge of research-informed literature embedded in the work. Outstanding selection of relevant and credible sources. High-level referencing skills consistently and professionally applied.
2. Knowledge and Understanding of Subject Extent of knowledge and understanding of concepts and underlying principles associated with the discipline.	Major gaps in knowledge and understanding of material at this level. Substantial inaccuracies.	Gaps in knowledge, with only superficial understanding. Some significant inaccuracies.	Evidence of basic knowledge and understanding of the relevant concepts and underlying principles.	Knowledge is accurate with a good understanding of the field of study.	Knowledge is extensive. Exhibits understanding of the breadth and depth of established views.	Excellent knowledge and understanding of the main concepts and key theories. Clear awareness of challenges to established views and the limitations of the knowledge base.	Highly detailed knowledge and understanding of the main theories/concepts, and a critical awareness of the ambiguities and limitations of knowledge.
3. Analysis Analysis, evaluation and synthesis; logic, argument and judgement; analytical reflection; organisation of ideas and evidence	Unsubstantiated generalisations, made without use of any credible evidence. Lack of logic, leading to unsupported/missing conclusions. Lack of any attempt to analyse, synthesise or evaluate.	Some evidence of analytical intellectual skills, but for the most part descriptive. Ideas/findings sometimes illogical and contradictory. Generalised statements made with scant evidence. Conclusions lack relevance.	Evidence of some logical, analytical thinking and some attempts to synthesise, albeit with some weaknesses. Some evidence to support findings/ views, but evidence not consistently interpreted. Some relevant conclusions and recommendations, where relevant	Evidence of some logical, analytical thinking and synthesis. Can analyse new and/or abstract data and situations without guidance. An emerging awareness of different stances and ability to use evidence to support the argument. Valid conclusions and recommendations, where relevant	Sound, logical, analytical thinking; synthesis and evaluation. Ability to devise and sustain persuasive arguments, and to review the reliability, validity & significance of evidence. Ability to communicate ideas and evidence accurately and convincingly. Sound, convincing conclusions / recommendations	Thoroughly logical work, supported by evaluated evidence. High quality analysis, developed independently or through effective collaboration. Ability to investigate contradictory information and identify reasons for contradictions. Strong, persuasive, conclusions, justifiable recommendations	Exceptional work; judiciously selected and evaluated evidence. Very high quality analysis, developed independently or through effective collaboration. Ability to investigate contradictory information and identify reasons for contradictions. Highly persuasive conclusions
4. Practical Application and Deployment Effective deployment of appropriate methods, materials, tools and techniques; extent of skill demonstrated in the application of concepts to a variety of processes and/or contexts; formulation of innovative and creative solutions to solve problems.	Limited or no use of methods, materials, tools and/or techniques. Little or no appreciation of the context of the application.	Rudimentary application of methods, materials, tools and/or techniques but without consideration and competence. Flawed appreciation of the context of the application.	An adequate awareness and mostly appropriate application of well established methods, materials, tools and/or techniques. Basic appreciation of the context of the application.	A good and appropriate application of standard methods, materials, tools and/or techniques. Good appreciation of the context of the application, with some use of examples, where relevant.	A very good application of a range of methods, materials, tools and/or techniques. Very good consideration of the context of the application, with perceptive use of examples, where relevant. Evidence of some innovation and creativity.	An advanced application of a range of methods, materials, tools and/or techniques. The context of the application is well considered, with extensive use of relevant examples. Application and deployment extend beyond established conventions. Innovation and creativity evident throughout.	Outstanding levels of application and deployment skills. Assimilation and development of cutting edge processes and techniques.
5. Skills for Professional Practice Demonstrates attributes expected in professional practice including:	Communication media is inappropriate or misapplied. Little or no evidence of autonomy in the completion of tasks.	Media is poorly designed and/or not suitable for the audience. Poor independent or collaborative initiative. Work lacks structure,	Can communicate in a suitable format but with some room for improvement. Can work as part of a team, but with limited involvement in	Can communicate effectively in a suitable format, but may have minor errors. Can work effectively as part of a team, with clear contribution	Can communicate well, confidently and consistently in a suitable format. Can work very well as part of a team, with very good contribution	Can communicate professionally and, confidently in a suitable format. Can work professionally within a team, showing	Can communicate with an exceptionally high level of professionalism. Can work exceptionally well and professionally within a team, showing advanced leadership skills. Work is exceptionally coherent, very fluent and is

individual initiative and collaborative working; deployment of appropriate media to communicate (including written and oral); clarity and effectiveness in presentation and organisation.	Work is poorly structured and/or largely incoherent.	organisation, and/or coherence	group activities. Work lacks coherence in places and could be better structured.	to group activities. Mostly coherent work and is in a suitable structure.	to group activities. Work is coherent and fluent and is well structured and organised.	leadership skills as appropriate, managing conflict and meeting obligations. Work is coherent, very fluent and is presented professionally.	presented professionally.
---	--	--------------------------------	--	---	--	---	---------------------------