



Course Specifications

Course Title:	Data Warehouse
Course Code:	502478-3
Program:	Bachelor in Computer Science
Department:	Department of Information Technology
College:	College of Computers and Information Technology
Institution:	Taif University

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A. Course Identification

1. Credit hours: 3
2. Course type
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input type="checkbox"/> Elective <input checked="" type="checkbox"/>
3. Level/year at which this course is offered: 11/4
4. Pre-requisites for this course (if any): 502372-3
5. Co-requisites for this course (if any): None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	4	100%
2	Blended	0	0
3	E-learning	0	0
4	Distance learning	0	0
5	Other	0	0

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	40
2	Laboratory/Studio	0
3	Tutorial	0
4	Others (specify)	0
	Total	40

B. Course Objectives and Learning Outcomes

1. Course Description

Data warehousing has drawn increasing interest within the software enterprises to gain critical insights of daily business analytic operations. Data warehouse is a tool providing comprehensive analysis of operational data and to identify patterns. This course provides an introduction to fundamental techniques and novel applications of data warehouse. Issues covered by this learning experience include data warehouse fundamentals, planning, business analytics modeling, data warehouse design and implementation. In particular, the role of data warehouse in supporting business intelligence and effective decision making. Further, it involves an in-depth study of various concepts needed to design and develop a data warehouse. This course is designed to expose students to concepts, enabling methods and hands-on usage and problem solving in an integrated way. As one of IS depth electives, it provides a good balance between theory and practice. The participants will explore applications and have great opportunity for hands-on experimentation with data warehousing and reporting tools.

2. Course Main Objective

The main objective of this course is to understand the basic concepts, architecture and process in a data warehouse. Moreover, the student will learn through this course how to design a data warehouse using dimensional modeling concepts and how to manipulate the data warehouse through OLAP data cube operations.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Understand the basic concepts and the main principles of data warehouse	K1
2	Skills :	
2.1	Master the main components of a data warehouse	S1
2.2	Analyze the role of both types of data warehouse infrastructures	S1
2.3	Design multidimensional data warehouse system	S2
2.4	Implement OLAP data cube operations in a data warehouse	S2
3	Values:	
3.1	Function effectively as a member or leader of a team engaged in activities to design a data warehouse system in a real-life application	V3

C. Course Content

No	List of Topics	Contact Hours
1	Overview of the data warehousing concepts	4
2	Data warehouse components	4
3	Architectural components of the data warehouse	4
4	Data warehouse components	4
5	Dimensional modeling in the data warehouse	12
6	OLAP data cube operations in the data warehouse	12
Total		40

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		
1.1	Understand the basic concepts and the main principles of data warehouse	Lecture Discussion	Written Exams Quizzes
2.0	Skills		
2.1	Master the main components of a data warehouse	Lecture Discussion	Written Exams Quizzes
2.2	Analyze the role of both types of data warehouse infrastructures	Lecture Discussion	Written Exams Quizzes
2.3	Design multidimensional data warehouse system	Lecture Discussion	Written Exams Assignments Quizzes Mini-Project
2.4	Implement OLAP data cube operations in a data warehouse	Lecture Discussion	Written Exams Quizzes Mini-Project
3.0	Values		
3.1	Function effectively as a member or leader of a team engaged in activities to design a data warehouse system in a real-life application	Discussion Work group	Mini-Project

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignments	8	10%
2	Mid Exam	6	20%
3	Minor project	10	10%
4	Quizzes	2, 4, 7	10%
5	Final Exam	12	50%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

Academic advising and counseling of students is an important component of teaching; student academic advising is a mandatory requirement of College of Computers and Information Technology (CCIT). Appropriate student advising provides support needed for the student during times of difficulty. In addition, it helps the student to build a close relationship with his/her advisor and to provide student motivation and involvement with the institution.

In addition, since faculty are usually the first to recognize that a student is having difficulty, faculty members play a key role in developing solutions for the students or referring them to appropriate services. Faculty members also participate in the formal student-mentoring program.

Additional counseling is provided by course directors, who provide students with academic reinforcement and assistance and refer “at risk” students to the Vice Dean for Academic Affairs and the Vice Dean for female section.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	<ul style="list-style-type: none"> Data warehousing fundamentals for IT Professionals, Paulraj Ponniah, Wiley, 2nd edition, 2010. ISBN-10: 0470462078 Data Warehouse systems, design and implementation, Alejandro Vaisman, and Esteban Zimanyi, Springer, 2016. ISBN-10: 3662513501.
Essential References Materials	<ul style="list-style-type: none"> The Data Warehouse Toolkit: The Definitive Guide to Dimensional Modeling, Ralph Kimball, Wiley, 3rd edition, 2013. ISBN-10: 1118530802.
Electronic Materials	Presentations and recorded lectures
Other Learning Materials	https://www.w3schools.com/

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	<ul style="list-style-type: none"> A Lecture room appropriate for maximum 30 students with a personal computer, a data show and a smart board.
Technology Resources (AV, data show, Smart Board, software, etc.)	<ul style="list-style-type: none"> Data show / White Board
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	NON

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of Teaching	Students	Students surveys and Students course evaluation
Improvement of Teaching	Course Coordinator	deficiencies based on the student Evaluation, faculty input, course file, and program assessment
Verifying Standards of Student Achievement	Curriculum Committee	<ul style="list-style-type: none"> Review CAF (Course assessment file) Alumni surveys. Periodic exchange and remarking of tests or a sample of assignments with staff at another

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	CS council
Reference No.	Meeting #12
Date	23-10-1443

