



Course Specifications

Course Title:	Web Services
Course Code:	502449-3
Program:	Bachelor in Information Technology
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 checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: 12/4
4. Pre-requisites for this course (if any): 502315-3
5. Co-requisites for this course (if any): 502510-3

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	7	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	30
3	Tutorial	0
4	Others (specify)	0
	Total	70

B. Course Objectives and Learning Outcomes

1. Course Description

This course will introduce the major concepts and techniques for enabling Web service- based interactions on the Web. Topics include various aspects of Web services such as reference models for Web services (UDDI, SOAP, WSDL), Web service composition, semantic Web services, security/privacy in Web services, and overview of Web service standards (BPEL4WS, WS-Security, etc). The course also puts emphasis on familiarizing the students with the recent trends in industry and academia to address Web service research issues.

2. Course Main Objective

The main objective of this course is to introduce the major concepts and techniques for enabling Web service-based interactions on the Web. Student will be able to describe basic Web services technologies (such as UDDI, SOAP, WSDL) and their applications, differentiate between RESTful and SOAP based Web services. Other topics include various aspects of Web services such as Web service composition, semantic Web services, security/privacy in Web services, and overview of Web service standards (BPEL4WS, WS-Security, etc). Students are also expected to describe and critically discuss the design and engineering issues and considerations involved in enterprise web application development.



3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Understand the principles of middleware and how it can be used.	K1
1.2	Understand the design principles and application of SOAP and REST based web services.	K1
1.3	Understand the principles of Coordination, Composition, and Web services transactions.	K1
2	Skills :	
2.1	Describe and critically discuss the design and engineering issues and considerations involved in enterprise web application development.	S1
2.2	Use industry standard open source tools to build, test, and deploy web applications based on collaborating Web services.	S2
3	Values:	
3.1	Evaluate basic Web services technologies and their applications.	V1

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Middleware and Web Services.	8
2	Overview of XML	4
3	Reference model for Web services UDDI, SOAP, WSDL.	16
4	RESTful Services	10
5	Web Services Coordination	8
6	Web Services Composition and Transactions	12
7	Security in Web Services	4
8	Web Services specifications	4
9	Semantic Web services	4
Total		70

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 principles of middleware and how it can be used.	Lecture Discussion Lab work	Written Exams Assignments Practical Exam
1.2	Understand the design principles and application of SOAP and REST based web services.	Lecture Discussion Lab work	Written Exams Assignments Practical Exam
1.3	Understand the principles of Coordination, Composition, and Web services transactions.	Lecture Discussion Lab work	Written Exams Assignments Practical Exam
2.0	Skills		
2.1	Describe and critically discuss the design and engineering issues and	Lecture Discussion	Written Exams Assignments



Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	considerations involved in enterprise web application development.	Lab work	Practical Exam
2.2	Use industry standard open source tools to build, test, and deploy web applications based on collaborating Web services.	Lecture Discussion Lab work	Written Exams Assignments Practical Exam
3.0	Values		
3.1	Describe basic Web services technologies and their applications.	Lecture Discussion Work group	Writing Exam Assignments Reports Oral Presentations

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignments and Quizzes	3,7,9	15%
2	Mid Exam	6	20%
3	Mini project	10	10%
4	Final presentation	10	5%
5	Labs	11	10%
6	Final Exam	12	40%

*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	Web Services - Concepts, Architectures and Applications, Gustavo Alonso, Fabio Casati, Harumi Kuno, Vijay Machiraju, Springer, Edition First, 2010
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Essential References Materials	XML, Web Services, and the Data Revolution, Frank P. Coyle, Addison-Wesley, Edition 1st, 2002 Service-Oriented Architecture (SOA): Concepts, Technology, and Design, Thomas Erl, Prentice Hall, Edition 1st, 2016
Electronic Materials	Presentations and recorded lectures
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	<ul style="list-style-type: none"> • A Lecture room appropriate for maximum 25 students with a personal computer, a data show and a smart board. • A Lab room appropriate for maximum 15 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"> • Lab materials and required software
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	NAN

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	IT Department Council/ Executive program committee
Reference No.	11
Date	23/10/21443

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