

المادة : مستودع البيانات(Data Warehouse) الفصل الدراسي الاول

الصف :الرابع نظم معلومات

كلية علوم الحاسوب وتكنولوجيا المعلومات

جامعة الانبار

Data Warehouse SYLLABUS

1. Data Warehousing .Overview and Concepts :
2. Need for data warehousing. The building blocks of a Data warehouse .
3. Architecture of Data Warehouse :
4. Metadata Management .
5. Principles of Dimension Modeling :
6. Introduction to Dimensional Modeling, Advanced Concepts .
7. ETL overview, Extraction, Loading, Transformation techniques .
8. .Information Access and Delivery :
9. Matching information to classes of users, OLAP – the need, Design of the OLAP database, OLAP.
- 10.Operations: slice, dice, rollup, drill-down... etc. OLAP implementations .
- 11.Applications.

Reference:

Data Warehousing Guide with Oracle® Database. Release 2 (11.2),

E10810-02. August 2009

PROGECTS:

- 1. DW and Data Mining.**
- 2. DW and Integration.**
- 3. Dimensions.**
- 4. Materialized View.**
- 5. DW and Indexing.**
- 6. DW AI techniques.**
- 7. DW Architectures Classification.**
- 8. Metadata.**
- 9. Extraction tools.**
- 10. ETL.**



Course Weekly Outline

Course Name: Artificial Intelligence I

Course Instructor	Dr. Belal Al-Khateeb				
E-mail	belal@computer-college.org				
Title	Asst. Prof.				
Course Coordinator	Dr. Belal Al-Khateeb				
Course Objective	1- Understanding of AI definitions, characteristics and types. 2- Distinguishing between AI search techniques. 3- Designing smart systems for solving daily life problems.				
Course Description	This course aims to make students know about AI and how to solve problems by using blind search techniques and resolution methods.				
Textbook	Artificial Intelligence: A Modern Approach, Stuart Russell and Peter Norvig, Pearson Education 2010.				
References	Artificial Intelligence: Structures and Strategies for Complex Problem Solving, George F. Luger, Addison-Wesley, 2008				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	25%	15%	10%	5%	50%
General Notes					



Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		General Introduction.		
2		The History of AI.		
3		Systematic Search: basic graph concepts; state space representation of problems.		
4		Depth-First Search.		
5		Breadth-First search.		
6		Hybrid Search.		
7		Predicate logic: basic concepts and definitions		
8		Predicate logic: basic concepts and definitions		
9		Mid Term Exam		
10		Propositional logic and resolution in propositional logic;		
11		Horn clauses; unification		
12		Clause normal form.		
13		Modus-ponens and resolution inference rules in predicate logic.		
14		Control strategies for resolution inference (problem solving).		
15		Control strategies for resolution inference (problem solving).		

Instructor Signature:

Dean Signature:



Course Weekly Outline

Course Name : Mobile Computing I

Course Instructor	Shokhan Mahmoud Hama				
E-mail	Project.project88@yahoo.com				
Title	Assist. Lecturor				
Course Coordinator	Shokhan Mahmoud Hama				
Course Objective	Provide students the fundamental aspects of Mobile Computing by applying mathematics and algorithms.				
Course Description	Fundamental course of Mobile Computing.				
Textbook	Devi Kamal, "Mobile Computing 2nd Edition", 2012,				
References	Gordon L. Stüber, "Principles of Mobile Communication", 3rd ed. 2012 Edition. Mobile Communications, 2/E, Schiller, Pearson Education, 2008				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	20%	-----	10%	10%	60%
General Notes	The best method to teach this course it must be started in parallel with applications.				



Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	17/10/2015	Mobile Transmission		
2	24/10/2015	Signal Propagation and LOS		
3	31/10/2015	Gain, Losses, Bandwidth		
4	07/11/2015	Modulation and Multiplexing		
5	14/11/2015	Mobile Computing Aspects		
6	21/11/2015	Cellular Mobile Generations		
7	28/11/2015	GSM Architecture		
8	12/12/2015	GSM Services		
9	19/12/2015	Mid Examine.		
10	26/12/2015	Location Management.		
11	02/01/2015	Handover Technology		
12	09/01/2015	Mobile IP		
13	16/01/2016	WAP Programming		
14	23/01/2016	Mobile Operating Systems		
15	30/01/2016	Mobile Applications		

1 / 12 / 2015
Instructor Signature:

Dean Signature:



Course Weekly Outline

Course Name: Information Security I

Course Instructor	Dr. Sufyan Taih Faraj Al-Janabi				
E-mail	sufyantaih@gmail.com				
Title	Professor				
Course Coordinator	Dr. Sufyan Taih Faraj Al-Janabi				
Course Objective	To make students familiar with the basic concepts of applied cryptography, including classical cryptography and modern secret key cryptography.				
Course Description	This is an introductory undergraduate course on cryptography and data security. We will focus on classical and symmetric key cryptography, including block ciphers and their modes of operation. The course will emphasize rigorous mathematical formulations of security goals and aim to train students in spotting weaknesses in designs.				
Textbook	William Stallings, <i>Cryptography and Network Security: Principles and Practice</i> , 6/E, Pearson Education, Inc., 2014.				
References	<p>Charles P. Pfleeger and Shari Lawrence Pfleeger, <i>Security in Computing</i>, John Wiley & Sons, Inc., 2007.</p> <p>Mark Stamp, <i>Information Security Principles and Practice</i>, John Wiley & Sons, 2006.</p>				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	30%		10%	10%	50%
General Notes					



Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	3/10/2015	Introduction Historical Notes		
2	10/10/2015	Classical Encryption Techniques Substitution Ciphers		
3	17/10/2015	Transposition Ciphers Encryption Machines		
4	24/10/2015	Block Ciphers		
5	31/10/2015	The Data Encryption Standard		
6	7/11/2015	DES Cryptanalysis		
7	14/11/2015	Groups, Rings, and Fields		
8	21/11/2015	Modular Arithmetic		
9	28/11/2015	Polynomial Arithmetic		
10	5/12/2015	Finite Fields		
11	12/12/2015	Finite Fields of the Form $GF(2^n)$		
12	19/12/2015	AES: The Advanced Encryption Standard		
13	26/12/2015	AES Strength		
14	2/1/2016	Using Block and Stream Ciphers		
15	9/1/2016	Modes of Operation		

Instructor Signature:

Dean Signature:

Information Security I

4th Year Undergraduate Level Course- The First Semester

College of CS and IT – University of Anbar

Instructor:

Prof. Dr. Sufyan T. Faraj Al-Janabi

Lecture Time:

- Saturday: 11:00 am - 2:00 pm (3 hours)

Course Description:

This is an introductory undergraduate course on cryptography and data security. It delivered for 4th year students in both computer science and information systems departments. Cryptography, broadly speaking, is about communicating in the presence of an adversary, with goals like preservation of privacy and integrity of communicated data. In the first semester, we will focus on classical and symmetric key cryptography, including block ciphers and their modes of operation. The course will emphasize rigorous mathematical formulations of security goals and aim to train students in spotting weaknesses in designs. This is generally regarded by undergraduates as a challenging course. It is mainly theoretical and mathematical in nature, and calls for ability to understand abstract concepts. Students would be asked to do assignments, solve home works, and implement programming projects in order to develop their skills.

Aim:

- To explore the concepts of information security attacks, services, and mechanism.
- To make students familiar with the basic concepts of applied cryptography, including classical cryptography and modern secret key cryptography.
- To explain the mathematical foundation of modern cryptography, especially number theory and finite fields.
- To highlight the practical applications and modes of operation of block ciphers.

Learning Outcomes:

After completing the module, the student should be able to:

- Describe the basic mathematical and technical issues relating to information security.
- Interpret how technology affects the design of symmetrical systems, especially block ciphers.
- Use rigorous mathematical formulations of symmetric cryptography to spot weaknesses in designs.
- Demonstrate skills in using classical ciphers for encryption and decryption.
- Demonstrate skills in using some basic cryptanalysis techniques related to classical cryptography.

Syllabus:

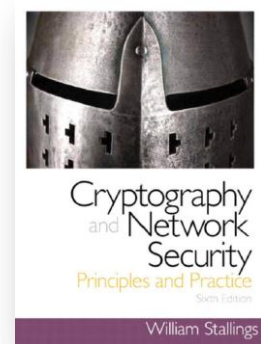
1.	Introduction Historical Notes	3 hours
2.	Classical Encryption Techniques Substitution Ciphers Transposition Ciphers Encryption Machines	6 hours
3.	Block Ciphers The Data Encryption Standard DES Cryptanalysis	6 hours
4.	Groups, Rings, and Fields	6 hours
5.	Modular Arithmetic	6 hours
6.	Polynomial Arithmetic	6 hours
7.	Finite Fields of the Form $GF(2^n)$	6 hours
8.	AES: The Advanced Encryption Standard AES Strength	3 hours
9.	Using Block and Stream Ciphers Modes of Operation	3 hours

Textbook:

Cryptography and Network Security: Principles and Practice, 6/E
by William Stallings

Publisher: Pearson Education, Inc.

Copyright: 2014

**Assignments and home works:**

Assignments and home works will be distributed during the course. Unless otherwise is stated, all home works should be performed individually by students. The default time for submitting any home work is one week (they should be submitted before the beginning of the next lecture). All assignments and home works have to be submitted in a printed well-organized form.

Programming Projects:

Programming projects are assumed to be implemented in C/C++ or Java. Both of a printed documents and CD need to be submitted. Usually these can be done based on student groups to be formed during the course.

Acknowledgements:

- These lecture notes are mainly based on those prepared by Prof. Avinash Kak (kak@purdue.edu), Purdue University. Our sincere thanks are devoted to him.
- Thanks are also devoted to William Stallings, Bryan J. Higgs, Simon Singh, and Mostafa H. Dahshan for offering good basic materials over the net.

Information Security II

4th Year Undergraduate Level Course- The Second Semester

College of CS and IT – University of Anbar

Instructor:

Prof. Dr. Sufyan T. Faraj Al-Janabi

Lecture Time: Saturday: 11:00 am - 2:00 pm (3 hours)

Course Description:

This is an introductory undergraduate course on cryptography and data security. It delivered for 4th year students in both computer science and information systems departments. Cryptography, broadly speaking, is about communicating in the presence of an adversary, with goals like preservation of privacy and integrity of communicated data. In the second semester, our focus will mainly be directed to public key cryptography. We will cover topics like hash functions, digital signatures, asymmetric encryption, RSA, public-key infrastructure, key distribution, and various applications. The course aim to train students in spotting weaknesses in designs. Indeed, we will cover topics like viruses, worms, and operating systems security. This is generally regarded by undergraduates as a challenging course. It is mainly theoretical and mathematical in nature, and calls for ability to understand abstract concepts. Students would be asked to do assignments, solve home works, and implement programming projects in order to develop their skills.

Aim:

- To explore the concepts of cryptographic key distribution and the limitation of symmetrical systems in this area.
- To make students familiar with the basic concepts of public key cryptography and hash functions.
- To explain the basic applications of public key systems in key distribution and digital signatures.
- To highlight the technical and social issues related to viruses, worms, and trusted systems.

Learning Outcomes:

After completing the module, the student should be able to:

- Understand and discuss the mathematical background behind the evolution of public key cryptography.
- Interpret how technology and theoretical advances can threat existing public key systems.
- Demonstrate skills in using some public key algorithms for various applications.
- Demonstrate skills in applying cryptographic hash functions for message authentication.
- Describe the social and ethical issues relating to viruses and other malicious codes.

Syllabus:

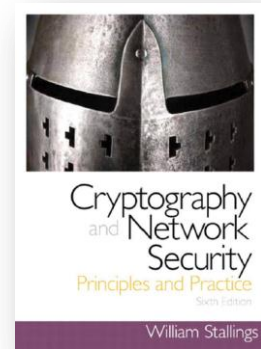
1.	Issues for Symmetric Key Cryptography: Key Distribution Random Number Generation	6 hours
2.	Prime Numbers Primality Tests	3 hours
3.	Public-Key Cryptography I: General Concepts RSA System RSA Security	6 hours
4.	Public-Key Cryptography II: Exchanging Secret Session Keys Diffie-Hellman System	6 hours
5.	Public-Key Cryptography III: Constructing Digital Signatures El-Gamal System	6 hours
6.	Hashing for Message Authentication Cryptographic Hash Functions MACs Schemes	6 hours
7.	Malware: Viruses Worms	6 hours
8.	Trusted Systems	3 hours
9.	Mounting Targeted Attacks with Trojans and Social Engineering	3 hours

Textbook:

Cryptography and Network Security: Principles and Practice, 6/E
by William Stallings

Publisher: Pearson Education, Inc.

Copyright: 2014

**Assignments and home works:**

Assignments and home works will be distributed during the course. Unless otherwise is stated, all home works should be performed individually by students. The default time for submitting any home work is one week (they should be submitted before the beginning of the next lecture). All assignments and home works have to be submitted in a printed well-organized form.

Programming Projects:

Programming projects are assumed to be implemented in C/C++ or Java. Both of a printed documents and CD need to be submitted. Usually these can be done based on student groups to be formed during the course.

Acknowledgements:

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- Thanks are also devoted to William Stallings, Bryan J. Higgs, Simon Singh, and Mostafa H. Dahshan for offering good basic materials over the net.



Course Weekly Outline

Course Name : Multimedia Computing I

Course Instructor	Dr. Salah Awad Salman				
E-mail	Salah_eng1996@yahoo.com				
Title					
Course Coordinator					
Course Objective	<p>أ. تغطي هذه المادة الاساس النظري لنظم المعلومات من جانب الاوساط (النص. رسم. الصورة. الصوت والفيديو)</p> <p>ب. و ان يعرف معلومات عن كل نوع من الاوساط (طرق ادخالها ومعالجتها واخراجها).</p> <p>ج. ان يفهم كيفية التحويل للاوساط من الشكل المدخل الى الشكل الذي يعالج بالحاسبة وكذلك انواع الصيغ التي يخزن بها في الحاسبة.</p> <p>د. ان يفهم الطالب الاسس التي يتم ضغط الاوساط والفائدة من ذلك.</p>				
Course Description	<p>Introduction to Multimedia computing, Multimedia Systems, Components of a Multimedia System, Multimedia Data Basics Analog and Digital Signal Conversion, Presentation of text and graph, Presentation of still image and digital audio, Presentation of video, Digital Audio Synthesis, MIDI, Basic Algorithms Compression, Graphic/Image Data Structures, Basics of Video Spatial and Frequency Domain, Image Compression , Video compression, Audio compression</p>				
Textbook	<p>Fundamentals of Multimedia, Ze-Nian Li, Mark S. Drew, Prentice Hall, 2003(ISBN: 0130618721</p>				
References	<p>Multimedia Module No: CM0340 c David Marshall 2013</p>				
Course Assessments	TermTests	Laboratory	Quizzes	Project	Final Exam
	30%	10%	5%	5%	50%
General Notes					



Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		Introduction to Multimedia computing		
2		Multimedia Systems		
3		Components of a Multimedia System		
4		Multimedia Data Basics		
5		Analog and Digital Signal Conversion		
6		Presentation of text and graph		
7		Presentation of still image and digital audio		
8		Presentation of video		
9		Digital Audio Synthesis		
10		Graphic/Image Data Structures		
11		Basics of Video		
12		Spatial and Frequency Domain		
13		Image Compression		
14		Video compression		
15		Audio compression		
16		Exam		

Instructor Signature:

Dean Signature:



Course Weekly Outline

Course Name: First Course

Course Instructor	ALI MAKKI SAGHEER				
E-mail	ali.m.sagheer@gmail.com				
Title	Web Application Development I				
Course Coordinator					
Course Objective	Give the student programming language to design and control web application.				
Course Description	Give overview about Asp.Net and .Net Framework, apply the First Asp.Net Program, Explain ASP.NET State Management, ASP.NET Web Control Tools, ASP.NET Statements, ASP.NET Data Structure, ASP.NET Collection, ASP.NET Data Access				
Textbook	Web Application Development , Free online resources for Microsoft .NET developers, Net-Information.com, net-informations.com (C) 2013				
References	1- Beginning ASP.NET 4.5 in CSharp and VB, Imar Spaanjaars, Joen Wiley & Suns, Inc., 2013. 2- Web Application Development , Free online resources for Microsoft .NET developers, Net-Information.com, net-informations.com (C) 2013				
Course Assessments	Term Tests	Laboratory	Quizzes	project	Final Exam
	(20%)	(10 %)	(10 %)	(10 %)	(50%)
General Notes					



Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	1/11/2015	What is ASP.NET ? Deploy an ASP.NET Web Application		
2	8/11/2015	ASP.NET View State		
3	15/11/2015	ASP.NET Session State ASP.NET Cookies ASP.NET Caching		
4	22/11/2015	Web Control Tools Label Control Button Control Textbox Control DropDownList Control Listbox Control Checkbox Control		
5	29/11/2015	-RadioButton Control -LinkButton Control -Image Control -Colander Control -Treeview Control		
6	6/12/2015	Control Statements -if else statements -for loop -foreach loop -while loop -switch case -Exceptions		
7	13/12/2015	Mid Exam		
8	20/12/2015	Recursion, Definition		
9	27/12/2015	Trees , Tree Structure, Binary Tree, Other types of trees		
10	3/1/2016	Tree Traversing, Trees Representation, General Tree, Binary Search Tree		
11	10/1/2016	Collections -ArrayList -HashTable		
12	17/1/2016	-Stack -Queue -Array		
13	20/1/2016	ADO.NET Architecture, Advantages of ADO.Net		
14	27/1/2016	Disconnected Data Access Architecture ASP.NET Connection String First ASP.NET Database Program		
15		Final Exam		

Instructor Signature:

Dean Signature: