Republic of Iraq
The Ministry of Higher Education
& Scientific Research

University: Anbar
College: CS & IT
Department: CS & IT
Stage: 4
Instructor name: Dr. Foad Salem
Academic status: Lecturer
Qualification: PhD
Place of work: Karkuk

Course Weekly Outline

Course Name : Artificial Intelligent(second course)

Course Instructor	Dr. Foad Salem Mubarek				
E-mail	Fualku1968@yahoo.com				
Title	Artificial Intelligent				
Course Coordinator	Dr. Foad Salem Mubarek				
Course Objective	Teaching students working with the AI problems and learn them select the suitable algorithm for each problem				
Course Description	This course involved different type of algorithm begging with blinded and move to heuristic algorithm. Then moving to logic and cover all titled belong to logic				
Textbook	Artificial intelligence: a modern approach, Russell and Norvig, 2nd Edition, Prentice Hall, 2003.				
References	Artificial intelligence, Luger, 5th ed. Addison-Wesley, 2005				
Course Assessments	TermTests	Laboratory	Quizzes	Project	Final Exam
	25%	15%	5%	5%	50%
General Notes					

Republic of Iraq
The Ministry of Higher Education
& Scientific Research

University: Anbar
College: CS & IT
Department:
Stage: fourth
Instructor name:Dr Foad Salem
Academic status: Lecturer
Qualification: Ph D
Place of work: Karkuk

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		Admissibility of heuristic	Prolog Prog.1	
2		Heuristic game algorithm	Prolog Prog.2	
3		MinMax Algorithm	Prolog Prog.3	
4		Application on MinMax algorithm	Prolog Prog.4	
5		Introduction To Logic	Prolog Prog.5	
6		Propositional Logic	Prolog Prog.6	
7		Example and tutorial in propositional logic	Prolog Prog7	
8		First Order Logic	Prolog Prog8	
9		Example and tutorial in first order logic	Prolog Prog9	
10		Inference in First order Logic	Prolog Prog10	
11		Inference rules (universal,existential,modes ponens)	Prolog Prog11	
12		Forward chaining	PrologProg12	
13		Backward Chining	Prolog Prog13	
14		Resolution method	Prolog Prog14	
15		Exam	Exam	

Course Weekly Outline

Instructor Signature: **Dean Signature:**

Republic of Iraq
The Ministry of Higher Education
& Scientific Research

University: Anbar
College: CS & IT
Department: Computer Science + Information Technology
Stage: 4th Year
Instructor name: Dr. Belal Al-Khateeb
Academic status: Asst. Prof.
Qualification: PhD
Place of work: University of Anbar

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					

Republic of Iraq
The Ministry of Higher Education
& Scientific Research

University: Anbar
University: Anbar
College: CS & IT
Department: Computer Science + Information Technology
Stage: 4th Year
Instructor name: Dr. Belal Al-Khateeb
Academic status: Asst. Prof.
Qualification: PhD
Place of work: University of Anbar

Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		Heuristic Search: Heuristic Functions.		
2		Hill Climbing Algorithm.		
3		Best-First Search Algorithm.		
4		Cost Functions.		
5		A* Algorithm.		
6		Properties of Heuristic Functions.		
7		Search in Games: Introduction.		
8		Min-Max Algorithm.		
9		Mid Term Exam		
10		Alpha-Beta Search Procedure; Enhancement to Game Search.		
11		Expert Systems: Structure; Rule Based Expert Systems.		
12		Control Strategies in Rule Based Production Systems: Backward Chaining and its Implementation.		
13		Pure Forward Chaining and its Implementation; Rule-Cycle Hybrid Control Strategy and its Implementation.		
14		Uncertainty in Expert Systems: Representing Probabilities in Rules; Combining Evidence.		
15		Other Approaches to Expert System Design: Decision Lattices; And-Or-Not Lattices.		

Instructor Signature:  **Dean Signature:**

Republic of Iraq
The Ministry of Higher Education
& Scientific Research

University: Anbar
College: CS & IT
Department: CS and IS Departments
Stage: 4th
Instructor name: Sufyan T. F. Al-Janabi
Academic status: Professor
Qualification: Ph.D.
Place of work: College of CS & IT

Course Weekly Outline

Course Name: Information Security II

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 and applications of public key cryptography and hash functions.				
Course Description	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. Indeed, we will cover topics like viruses, worms, and operating systems security.				
Textbook	William Stallings, *Cryptography and Network Security: Principles and Practice*, 6/E, Pearson Education, Inc., 2014.				
References	Charles P. Pfleeger and Shari Lawrence Pfleeger, *Security in Computing*, John Wiley & Sons, Inc., 2007. Mark Stamp, *Information Security Principles and Practice*, John Wiley & Sons, 2006.				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	30%		10%	10%	50%
General Notes					

Republic of Iraq
The Ministry of Higher Education
& Scientific Research

University: Anbar
College: CS & IT
Department: CS and IS Departments
Stage: 4th
Instructor name: Sufyan T. F. Al-Janabi
Academic status: Professor
Qualification: Ph.D.
Place of work: College of CS & IT

Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	20/2/2016	Issues for Symmetric Key Cryptography: Key Distribution		
2	27/2/2016	Random Number Generation		
3	5/3/2016	Prime Numbers Primality Tests		
4	12/3/2016	Public-Key Cryptography I: General Concepts		
5	19/3/2016	RSA System RSA Security		
6	26/3/2016	Public-Key Cryptography II: Exchanging Secret Session Keys		
7	2/4/2016	Diffie-Hellman System		
8	9/4/2016	Public-Key Cryptography III: Constructing Digital Signatures		
9	16/4/2016	El-Gamal System		
10	23/4/2016	Hashing for Message Authentication Cryptographic Hash Functions		
11	30/4/2016	MACs Schemes		
12	7/5/2016	Malware: Viruses		
13	14/5/2016	Worms		
14	21/5/2016	Trusted Systems		
15	28/5/2016	Mounting Targeted Attacks with Trojans and Social Engineering		

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.

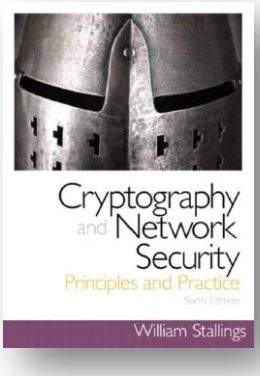
Syllabus:

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.

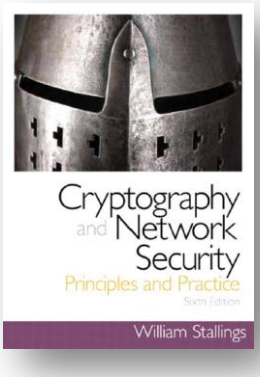
Syllabus:

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:

- 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.

Republic of Iraq
Ministry of Higher Education
& Scientific Research

University: University of Anbar
College: CS & IT
Department: Information Systems
Stage: Forth
Instructor Name: Ali Makki Sagheer
Academic status: Assist. Prof.
Qualification: Computer Science PhD
Place of work: Anbar University

Course Weekly Outline

Course Name: Second Course

Course Instructor	**ALI MAKKI SAGHEER**				
E-mail	**ali.m.sagheer@gmail.com**				
Title	**Web Application Development II**				
Course Coordinator					
Course Objective	**Give the student programming language to manage Database on web application.**				
Course Description	**Give overview about ASP.NET Data Providers, Command, Dataset, Dataset row count, ASP.NET Database Programming, Stored Procedures, ASP.NET GridView, DetailsView, ASP.NET Repeater, ASP.NET Communications, ASP.NET Excel Automation, ASP.NET Data Access**				
Textbook	**Web Application Development , Free online resources for Microsoft .NET developers, Net-Informations.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-Informations.com, net-informations.com (C) 2013**				
Course Assessments	**Term Tests**	**Laboratory**	**Quizzes**	**project**	**Final Exam**
	(20%)	**(10 %)**	**(10 %)**	**(10 %)**	**(50%)**
General Notes					

Republic of Iraq
Ministry of Higher Education
& Scientific Research

University: University of Anbar
College: CS & IT
Department: Information Systems
Stage: Forth
Instructor Name: Ali Makki Sagheer
Academic status: Assist. Prof.
Qualification: Computer Science PhD
Place of work: Anbar University

Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	21/2/2016	**ASP.NET Connection, Sql Server Connection, OLEDB Connection, ODBC Connection**		
2	28/2/2016	**ASP.NET ExecuteNonQuery ExecuteScalar ExecuteReader DataReader DataAdapter DataAdapter Commands**		
3	6/3/2016	**How to Asp.Net Dataset Find Tables in a Dataset**		
4	13/3/2016	**How to Asp.Net Dynamic Dataset Dataset Column Definition**		
5	20/3/2016	**ASP.NET DBNull Value ASP.NET single quotes**		
6	27/3/2016	**ASP.NET Procedure with Parameter Range of records from database ASP.NET Image to Database**		
7	3/4/2016	**ASP.NET Simple GridView Sorting , Paging and AutoGenerateColumns**		
8	10/4/2016	**Mid Exam**		
9	17/4/2016	**ASP.NET GridView Editing and GridView Delete**		
10	24/4/2016	**Detailsview Update Detailsview Delete GridView with DetailsView**		
11	1/5/2016	**How to Repeater ASP.NET Repeater Templates Repeater with HTML Table ASP.NET Repeater Paging**		
12	8/5/2016	**ASP.NET Email application**		
13	15/5/2016	**Email Address Validation ASP.NET File Upload ASP.NET Email Attachment**		
14	22/5/2016	**Export ASP.NET to Excel Write content from ASP.NET to Excel**		
15	29/5/2016	**Read Excel file from ASP.NET Insert to Excel file from ASP.NET Modify Excel file from ASP.NET**		

Instructor Signature:

Dean Signature:

Republic of Iraq
The Ministry of Higher Education
& Scientific Research

University: Anbar
College: CS & IT
Department: computer science
Stage: 4th
Instructor name: Ali j. Dawood
Academic status: Assist. Prof.
Qualification: Phd computer science
Place of work: Ar Ramadi

Course Weekly Outline

Course Name : Operating System 2

Course Instructor	Assist. Prof. Dr. Ali Jbaeer Dawood				
E-mail	dralijd@yahoo.com				
Title	Assist. Prof.				
Course Coordinator					
Course Objective	To present operating systems objectives, concepts, structure and mechanisms. To develop students practical knowledge of operating systems by means of advanced use and system programming.				
Course Description	(1) Memory Managment: Fixed Partitions, Variable Partitions, Virtual Memory, Paging, Page Replacment Algoritms, Segmentation; (2) Input/Output Managment; (3) Operating Systems Practice: Linux Operating System, Linux System Programming, Win32 System Programming.				
Textbook	-Petrson, Operating System Concepts, Prentice Hall				
References	-Tanenbaum, Andrew S. Modern Operating Systems. Prentice Hall. -Hantelmann, Fred. Linux Start-up Guide. Springer. -Kernighan, Brian W. e Ritchie, Dennis M. The C Programming Language (ANSI C). Prentice-Hall. -Robbins, Kay A. Practical UNIX Programming. A Guide to Concurrency, Communication, and Multithreading. Prentice-Hall.				
Course Assessments	TermTests	Laboratory	Quizzes	Project	Final Exam
	C1=15% C2=15%	10%	10%		50%
General Notes					

Republic of Iraq
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University: Anbar
College: CS & IT
Department:
Stage:
Instructor name:
Academic status:
Qualification:
Place of work:

Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		Asynchronous Concurrent Processes		
2		Critical section, semaphores, monitors		
3		Memory Management, strategies, allocation		
4		Multiple Partition allocation (MFT, MVT)		
5		Placement, Fragmentation,		
6		Paging method		
7		Segmentation method		
8		Virtual memory, Replacement algorithms		
9		Thrashing, Working set, locality		
10		Disk scheduling algorithm		
11		Caching and Intro to File Systems		
12		Security and the File System		
13		Authentication and Security		
14		File System Implementation		
15		File System Implementation - Performance		
16		Distributed and Networking		

Instructor Signature:

Dean Signature: