DATA COMPRESSION COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	University of Baghdad/ College of science for women
2. University Department/Centre	Computer Science department
3. Course title/code	Data Compression / 402 CDC
4. Modes of Attendance offered	Actual attendance required for all students even in the case of (passed) student, and there is no study remotely and according to the ordered laws.

5. Semester/Year	Fourth Stage/ First Semester
6. Number of hours tuition (total)	60 hours (30 theoretical part, 30 practical part)
7. Date of production/revision of this specification	13-3-2016
8. Aims of the Course	
This article enables the student for get knowledge about various kinds of algorithms meant to compress the data as well as the decompression, the degree of complexity of each is presented as well as their performance and what kind of data is suitable for is explained, vb.net is applied as the programming language.	

9· Learning Outcomes, Teaching ,Learning and Assessment Methode
B- Knowledge and Understanding A1- Get knowledge of the existing algorithms for data compression that are lossy techniques A2 - Get knowledge of the existing algorithms for data compression that are lossless techniques A3 - Understand how the algorithm works A4 - Understanding data variety and how to choose specific algorithm accordingly A5 - understanding vb.net environment A6 - How to solve problem using vb.net
B. Subject-specific skills B 1 - choose the appropriate algorithm for processing certain data and depending on the size and nature of these data B 2 - Choosing the right algorithm to search for specific data within the larger

group, and depending on their size

B 3 - choose the most efficient from a selection algorithms algorithm can solve the same problem by analyzing and know the time and necessary to accomplish the memory size required

B4- choice of programming most efficient way to solve a particular problem and move away from the use of methods in the prolonged solution

Teaching and Learning Methods

- Education: provide printed lectures or modern sources and diverse and rich including examples.
- Education: Harnessing the blackboard to the goal of teaching students and explain the steps the solution and extraction results.
- Education: resolving some questions, with intent to contain mistakes and make the students extracted error.
- Learning: asking questions and inquiries and making the student turn into a teaching explanation and solution on the blackboard at that point.
- Learning: questions and direct all students to graduate to learn the extent of interaction and the rest to be paid attention to.

Assessment methods

- Quizzes (quiz) semi-weekly
- Reporting and in the form of aggregates by a report for each set and distributed it over students
- Asking questions sudden that overlapping with the explained Article
- laboratory tests on the computer and is written to enable the student to the solution without a computer
- monthly and quarterly tests

C. Thinking Skills

C1. Ask a group solutions to the same problem and discussed both individually and determine the appropriate method of solution to the problem at hand with a stand on the disadvantages of the rest of the methods

C2. Put forward solutions contain inaccuracies and identifying these mistakes After discussion and processed

C3. Asked oral exceptional questions that need exceptional answers as be of

a specific weight in terms of grades, which are a strong incentive for student's participation and competition.
Teaching and Learning Methods
Discussions that arise in the course of the lecture, and an attempt to involve the largest possible number of students, and touched on the details of things and discussed objectively and targeted discussion.
Assessment methods
Oral evaluated by involving students in discussions • Quizzes (quiz) • laboratory tests on the computer and is written • exams monthly and quarterly

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1. Alert errors in students' oral answers and discuss to find out its mistake
D2. Alert on errors students' editorial answers and marking them to clarify to the students

10. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4	Definition, modeling, objective of data compression	First example: Introduction	According to point 10 above and as needed	According to point 10 above and as needed
2	4	General classification of compression methods, and important terms to know	application example	According to point 10 above and as needed	According to point 10 above and as needed
3	4	Metric parameters, entropy calculation and understanding	application example	According to point 10 above and as needed	According to point 10 above and as needed
4	4	Run Length Encoding,	application example	According to point 10 above and as needed	According to point 10 above and as needed
5	4	Hardware Data Compression	application example	According to point 10 above and as needed	According to point 10 above and as needed
6	4	Move to Front	application example	According to point 10 above and as needed	According to point 10 above and as needed
7	4	Burrows-Wheeler Transform	application example	According to point 10 above and as needed	According to point 10 above and as needed

8	4	Quantization	application example	According to point 10 above and as needed	According to point 10 above and as needed
9	4	First seasonal exam			
10	4	Statistical Method, Prefix Code	application example	According to point 10 above and as needed	According to point 10 above and as needed
11	4	Prefix property of a code	application example	According to point 10 above and as needed	According to point 10 above and as needed
12	4	Unary code	application example	According to point 10 above and as needed	According to point 10 above and as needed
13	4	Binary Tree	application example	According to point 10 above and as needed	According to point 10 above and as needed
14	4	Shannon-Fano Code and Huffman Code	application example	According to point 10 above and as needed	According to point 10 above and as needed
15	4	Second and Final seasonal exam			

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1- Introduction to Data Compression, by Guy E. Blelloch, Carnegie Mellon University, 2013. 2- Data Compression Objectives, University of New Orleans, Department of Computer Science, 2008. 3- The Data Compression Book (Second Edition), by Mark Nelson and JeanloupGailly, Cambridge, 2004. **4-**Data Compression;The Complete Reference(fourth

	edition), by David Salomon, published by Springer, 2007. **5-** Fundamental Data Compression, by Ida MengyiPu, Published by ELSEVIER, 2006.
Special requirements (include for example workshops, periodicals, IT software, websites)	1- Variable-Length Codes for Data Compression, by David Salomon, Published by Springer, 2007. 2- The Complete Reference Visual Basic.Net, by Jeffrey R. Shapiro, McGraw–Hill Companies, USA, 2002.
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	303 CAA, 308 CDI.
Minimum number of students	Depending on the size of the classroom, according to the division of the people, 20 students
Maximum number of students	Depending on the size of the classroom, according to the division of the people, 30 students.