COMPILER 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	Compiler / 313 CCO
4. Programme(s) to which it contributes	Physical Attendance
5. Modes of Attendance offered	
6. Semester/Year	Third Year/ Second Semester

7. Number of hours tuition (total)	60 total (30 theoretical, 30 practical)
8. Date of production/revision of this specification	16/6/2016
9. Aims of the Course	
The aim of this course is to get acquainted with the compiler construction basics and to study the algorithms required to design a compiler ,which is a program or software for converting a source program written in high level language to target program in assembly language.	

10· Learning Outcomes, Teaching ,Learning and Assessment Methode
A- Knowledge and Understanding A1. Recognize the difference between the interpreters and translators. A2. Identify the stages of translators for each programming language. A3. Knowledge and understanding of the foundations of the work contexts of each phase independently. A4. Knowledge and understanding of the input data type and that it happens in a variety of ways to represent A5. Knowledge and understanding of how to deal with any worthwhile entrance and validated. A6 . Understand the types of structures used diagrams and harnessed to make sure of the validity of any linguistic representation.
B. Subject-specific skills B1. Choose the most efficient representation for each stage of the translator. B2. Creating, editing proper context rules to represent the language. B3. Choose the correct result of the road without the occurrence of ambiguity in finding solutions.
Teaching and Learning Methods

- Education: provide lectures and printed sources from the modern, diverse and rich sources including examples

- Education: Harnessing smart 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, brainstorming method

- Learning: questions directly and consequently all students to learn the extent of interaction and the rest to be paid attention to

- Learning: Each specific group and explain its interaction between students with questions and answers and provide an environment that enables the student to lecture management or debate.

Assessment methods

- Quizzes (quiz) semi-weekly

- Reporting and in the form of aggregates by a report for each set and presented over students

- Questions sudden and overlapping put up with to explain 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.providing range 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 solutions.

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

C3. oral exceptional questions that need exceptional answers where heavyweight grades are assigned and some tipoff grades also provides.

C4. choose the most appropriate algorithm used to manipulate the age checking out the image descriptions .

Teaching and Learning Methods

Discussions that arise during the time of lecture, and an attempt to involve the largest possible number of students in the conversations and discussion, and direct the discussions to be objectively purpose.

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. distribution of specific topics for each group of students to prepare research reports from the the World Wide Web, the sources or the library and drafted in accordance with the basis of the approved formulation research.

D2. giving leadership debate administration, however, the group discussion and enable them to drive and manage the dialogue

D3. alert on errors in the answers to the oral and discuss them to learn their mistake.

D4. alert on errors in the answers of students in the written exams to clarify to the student.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	2	Understanding what compiler means and why we need compiler.	Introduction of Compilers and languages	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٢	2	Discuss a symbol table and its entries.	Symbol table	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٣	2	Define symbol table types	Type of Symbol table	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٤	2	Discussing the function of lexical anaylasis	Lexical analysis	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٥	2	Understanding the definitions of regular expression and finite state automata.	Regular expressions & Finite state automata	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand

٦	2	View of the NFA and DFA algorithms	Finite state automata: Nondeterministic and deterministic finite automata	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٧	2	mid-term Exam	mid-term Exam	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٨	2	Discussing the core of the compiler which is the syntax analysis	Syntax analysis	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
٩	2	View of the top down parsing types	Top-down parsing: Introduction & Eliminating left recursion in a grammar	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
١٠	2	Discussing the First and Follow algorithms.	Predictive parsers: LL(1) grammars& Construction of first and follow.	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
١١	2	View of the main types of bottom up parsing	Bottom-up parsing: Shift-reduce parsers& SLR(1) parsing	According to point 10 hereinabove and on	According to point 10 hereinabove and on

				demand	demand
١٢	2	How we can generate intermediate code	CLR(1) parsing& LALR parsers.	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
١٣	2	How we can generate intermediate code	Semantic analysis and Intermediate code generation	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
١٤	2	How we can optimize the code and generate it.	Optimization and Code generation	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand
15	2	Final Exam	Final Exam	According to point 10 hereinabove and on demand	According to point 10 hereinabove and on demand

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	**1- Principle of compiler design Alfred V. Aho & Jeffrey D.Ullman** **2. Basics of compiler Design Torben Egidius Mogensen** **3. Compilers : principles, techniques, and tools Alfred V. Aho & Jeffrey D. Ullman** **4- Internet.**

Special requirements (include for example workshops, periodicals, IT software, websites)	Software of C++ language .
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Computational Theory, Data Structures, Discrete Structures, Structure Programming.
Minimum number of students	Depending on the size of the hall and the division of the people, 25 students.
Maximum number of students	Depending on the size of the hall and the division of the people, 35 students.