COMPUTATION THEORY COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COMPUTATION THEORY 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	Baghdad University- College of Science for Women
2. University Department/Centre	Computer Science Department
3. Course title/code	Computation Theory / 213 CCT
4. Programme (s) to which it contributes	Learn student skills of machine learning
5. Modes of Attendance offered	There is no real presence of distance learning by applicable laws.

6. Semester/Year	Second year / Semester II
7. Number of hours tuition (total)	30 hours Theoretical only
8. Date of production/revision of this specification	16-6-2016

9. Aims of the Course

This course is designed to confirm the theory of calculation models and analysis. The goal of the analysis is to define and prove the capabilities and limitations of the models designated account. Here we show that there are unsolvable problems and cannot answer by mathematical model and prove that there are limits on the account, which are within the context of the limits of the source, and so this course gives the possibility of finding solutions to some of the problems in Computation theory .

10· Learning Outcomes, Teaching ,Learning and Assessment Methode

Z- Knowledge and Understanding

A1. Identify the kinds of representation Formal Languages and non-formal.

A2. Learn how to represent any Formal Language.

A3. Knowledge and understanding of the foundations of the work contexts rules.

A4. Knowledge and understanding of the diversity of incoming data and that it

happens in a variety of ways to represent it.

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 best representation to any formal language.

B2. Create edit the appropriate context rules to represent the language.

B3. the right to choose the road leading to the result of the occurrence of cases of

   ambiguity in finding solutions.

B4.Choose the best solution and avoids lengthy solutions.

Teaching and Learning Methods

•Education: give printed lecturer from modern variety of sources.

•Education: resolving some questions, with intent to contain errors and make

      students extracting error.

•Learning: ask questions and make the student turns to teaching by solving some

      examples.

•Learning: direct questions for the students to see how they interact and keep

      them attentive along lessons.

•Learning: allowing students to ask their questions and be answered by the

      students themselves with providing suitable for them to motivate

      them to think right panel environment.

Assessment methods

•Sudden exam (quiz).

•Performance of homework .

•Ask questions during a sudden extra ordinary explain the material and reward

 the student who answers them.

•Monthly tests.

C. Thinking Skills

C1. introducing a range of solutions to the same problem, discuss and determine

   how best solution with surrounding defects Other roads.

C2. Put forward solutions contain inaccuracies and identifying these mistakes

   After discussion and processing.

C3. ask questions during the lecture, which will be replaced competition among

   students to encourage them to participate And thinking properly.

Teaching and Learning Methods

Providing lectures rich with examples miscellaneous reopen discussion of the substantive application and to answer their questions and their questions regarding the curriculum.

Assessment methods

- Sudden quizzes.
- Performance of homework .

- Ask questions during a sudden extra ordinary explain the material and reward

  the student who answers them.

- Monthly tests.

D. General and Transferable Skills (other skills relevant to employability and personal development)

 D1. Prepare reports on specific topics and in groups

 D2. Alert students to errors in their answers oral and discussed by the rest of the

   students

 D3. Alert students to errors in their answers written and clarified

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2		**Historical Introduction & Principles of FA**	Theoretical	
2	2		**Mathematical Tools and Techniques(set, graph, languages(**	Theoretical	
3	2		**Finite Automata and the Languages They Accept (DFA)**	Theoretical	
4	2		**Non-Deterministic Finite Automata & conversion into DFA**	Theoretical	
5	2		**regular expressions & conversion into DFA**	Theoretical	
6	2		**The Pumping Lemma & Non-Regular Languages**	Theoretical	
7	2		**mid-term Exam**		
8	2		**Context Free Grammar**	Theoretical	
9	2		**Derivation Trees and Ambiguity**	Theoretical	
10	2		**Pushdown Automata**	Theoretical	
11	2		**A PDA from a Given CFG**	Theoretical	

11. Course Structure

12	2		A CFG from a Given PDA	Theoretical	
13	2		Turing Machines	Theoretical	
14	2		Turing Machines as Language Acceptors,part1.	Theoretical	
15	2		Turing Machines as Language Acceptors,part2.	Theoretical	

12. Infrastructure

Required reading:
· CORE TEXTS
· COURSE MATERIALS
· OTHER
	1- Jeffrey D. Ullman, Introduction to Automata Theory, Languages, and Computation,1979.
	
	2- Harry R. Lewis, Elements of The Theory of Computation,
	
	  2nd Edition, 1998.
	
	3- James L. Hein, Theory of Computation : An Introduction,
	
	  2006.
	
	4- Micheal Sipser , Introduction to The Theory of Computation,
	
	  2nd Edition,2006.
	
	5- Internet.

Special requirements (include for example workshops, periodicals, IT software, websites)	

Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Data Structures, Discrete Structures, Structure Programming
Minimum number of students	25 student
Maximum number of students	35 student