**(( أستمارة الخطة التدريسية السنوية ))**

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| **فريال جاسم عبد الرزاق** | **اسم التدريسي:** |
| [fryal.jassim@yahoo.com](mailto:fryal.jassim@yahoo.com) | **البريد الالكتروني:** |
| **Computation Theory II** | **اسم المادة:** |
| **فصلي** | **مقررالفصل:** |
| On completion of this course, students will be able to explain the basic methods and conclusions of the Theory of Computation. They will be able to apply these methods to problems from different fields and be guided by the results in searching for computational solutions to the problems. In particular, students will be able understand these concepts carefully. | **أهداف المادة:** |
| 1. Memorize the Introductory to the Computational theory and Automata Languages. 2. Describe the pushdown automata and cotext-free Language. 3. Properties of cotext-free Language, the pumping lemma. 4. Decision procedure for regular Sets ( emptiness, finiteness, containment and equivalence. 5. Closure properties ofcotext-free Language( union , concatenation, Kleen closure and substitutions). 6. Decision procedure on cotext-free Language( emptiness, empty string , containment and finiteness). 7. Use Turing Machines, Design Turing Machines , Analyze Turing Machines ,the Turing Machines model, computable language and functions. 8. Describe the Turing Machines as computer of integer functions. 9. Describe the Technique for Turing Machines construction (storage in finite control, multiple trucks). 10. Modification of Turing Machines(two ways infinite tape, multi-tape Turing Machines). 11. Recursive and Recursively enumerable Sets and their properties. 12. Non deterministic Turing Machines. 13. The classes P and NP. 14. Problems solvable in polynomial time. 15. Nondeterministic polynomial time.   . | **التفاصيل الاساسيه للمادة:** |
| 1. Daniel I. A. Cohen. Introduction to Computer Theory. 2nd ed .Wiley. 1996. ISBN-10: 0471137723 . 2. Sipser, Michael. [Introduction to the Theory of Computation](http://www-math.mit.edu/~sipser/book.html). 2nd ed. Boston, MA: Course Technology, 2006. ISBN: 0534950973. 3. Martin, John. [Introduction to Languages and the Theory of Computation](http://www.amazon.com/exec/obidos/ASIN/0072322004/ref=nosim/mitopencourse-20). New York, NY: McGraw Hill, 2002. ISBN: 0072322004. 4. Kozen, Dexter Automata and Computability .New York ,NY:Springer Verlag,1999.ISBN:0387949070. | **الكتب المنهجية:** |
|  | **المصادر الخارجية:** |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | **الامتحان النهائي** | **السعي** | **المختبرات** | **النظري** | **الفصل الدراسي** | | **%50** | **%50** |  | **%50** | **الاول** | | **تقديرات الفصل:** |
|  | **معلومات اضافية:** |

**جدول الدروس الأسبوعي – الفصل الدراسي الثاني**

| **مفردات المقرر او المحتوى** | |
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| The Pushdown Automata and Context-free Language. | **Week 1** | |
| Properties of cotext-free Language, the pumping lemma. | **Week 2** | |
| Decision procedure for regular Sets ( emptiness, finiteness, containment and equivalence. | **Week 3** | |
| Closure properties ofcotext-free Language( union , concatenation, Kleen closure and substitutions). | **Week 4** | |
| Decision procedure on cotext-free Language( emptiness, empty string , containment and finiteness). | **Week 5** | |
| Turing Machines, Design Turing Machines , Analyze Turing Machines ,the Turing Machines model, computable language and functions. | **Week 6** | |
| Describe the Turing Machines as computer of integer functions. | **Week 7** | |
| Describe the Technique for Turing Machines construction (storage in finite control, multiple trucks). | **Week 8** | |
| Modification of Turing Machines(two ways infinite tape, multi-tape Turing Machines). | **Week 9** | |
| Recursive and Recursively enumerable Sets and their properties. | **Week 10** | |
| Non deterministic Turing Machines. | **Week 11** | |
| The classes P and NP. | **Week 12** | |
| Problems solvable in polynomial time. | **Week 13** | |
| Nondeterministic polynomial time. | **Week 14** | |
| **Exam** | **Week 15** | |

**توقيع الاستاذ: توقيع العميد:**

م . فريال جاسم