"KADRI ZEKA" UNIVERSITY
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COURSE SYLLABUS
Course title: **Algorithms**

Basic course information:	
Academic unit:	**Faculty of Applied Sciences**
Course title:	**Algorithms**
Level:	**Bachelor**
Course status:	**Elective**
Year of study:	**Year I semester II**
Number of classes in a week	**2+2**
ECTS:	**5**
Time / location:	
Course lecturer:	**Prof.Ass.**
Contact details:	
Course overview:	Introduction. Basic understanding of the algorithm. Characteristics of algorithms. Efficiency, Correction and Value of Algorithm. Comparisons of algorithms through the Random-Access Machine. Types of algorithms. Recursion algorithms. Applying algorithms. Algorithm for sorting. Random number algorithms. Backward algorithms. Graphic algorithms. Algorithms for searching in depth and width.
Course objectives:	-Alignment with algorithm structures that are very much needed for databases and other applications. -Student will be able to use linear structure algorithms, search algorithms and algorithms that apply to graphs
Intended learning outcomes:	Students who will successfully complete this subject will be able to: - These types of algorithms apply to problem solving when creating different softwares

Impact on student commitment			
Activity	**Classes**	**Days/weeks**	**Total**
Lectures	2	15	30
Theoretical/laboratory exercises	1	15	15
Contacts with the lecturer/consultation hours	1	15	15
Partial exams, workshops	2	3	6

Homework	1	15	15
Self-studying (in the library or home)	1	15	15
Final preparation for the exam	5	1	5
Time spent in evaluation (tests, final exam)	4	1	4
Projects, workshops, presentations ,etc	10	2	20
Total			**130:25 ≈5**

5 ECTS	
Teaching methods:	Lectures, laboratories, homework
Evaluation methods:	First test: 30 points Second test: 30 points Homework: 30 points Presence and activity in lectures: 5+5=10 points Final exam: 60 points(for students that do not pass with partial exams(tests)) Total: 60+30+10=100 points. Grading: Total number of points is 100. 50-60 = 6; 61-70 = 7; 71-80 = 8; 81-90= 9; 91-100 = 10 Points under 50 do not reach a passing grade.
Literature	
Basic literature:	1.Steven S. Skiena The Algorithm Design Manual Springer 2008 2.Robert Sedgewick and Kevin Wayne Algorithms, 4th Edition Addison-Wesley Professional 2011
Additional literature:	1.Jon Kleinberg, Éva Tardos Algorithm Design Addison Wesley 2005

Designed plan of study:

Week	**Lectures:**
First week:	Syllabus
Second week:	Basic understanding of the algorithm.
***Third week*:**	Characteristics of algorithms.
Fourth week:	Efficiency, Correction and Value of Algorithm.
Fifth week:	Comparisons of algorithms through the Random Access Machine.
***Sixth week*:**	Types of algorithms.
Seventh week:	Test 1
Eighth week:	Recursion algorithms.
Ninth week :	Applying algorithms.
Tenth week:	Algorithm for sorting.
***Eleventh week*:**	Random number algorithms.
***Twelfth week*:**	Backward algorithms.
***Thirteenth week*:**	Graphic algorithms.
***Fourteenth week*:**	Algorithms for searching in depth and width.
***Fifteenth week*:**	Test 2

Academic policy and rules of conduct:
The student is obligated to attend the lectures and exercises. Cheating at exams is punishable according to the statute and regulations of the university. The code of conduct refers to the students as well as to the teachers.