UNIVERSITETI "UKSHIN HOTI" PRIZREN
FACULTY OF COMPUTER SCIENCE

PROGRAM: Information Technology and Telecommunication - Turkish

Curriculum - – SYLLABUS							
Level of studies		Bachelor		*Program*	TIT-TUR	*Academic year*	2018/19
SUBJECT		Algorithms and data structures					
Year	1	*Status Of the subject*	Obligatory		*Code*	*ECTS credits*	6
Semester	2						
Teaching weeks		15		*Hours teaching*	45	*Lectures*	*Exercises*
						2	2
Teaching Methodology		• Power point of course subjects. • Exercises and homework exercises related to the course subjects. • Course repetition, group work, discussion and analysis.					
Consultation		Students with a grade of 40 or above can attend the interview.					
The teacher		PhD.Cand. Berkant Başa		*E-mail:*	basaberkant@gmail.com		
				Tel.:	berkant.basa@uni-prizren.com		
Assistant		PhD.Cand. Akif Gaşi		*E-mail:*	akifgas@gmail.com		
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Study goal and table of content	Benefits of student
The aim of this course is to provide all kinds of infrastructure related to algorithms analysis and data structure models needed in mathematical model creation and data.	Students who successfully complete this course will be able to; • Learning the methods of algorithm analysis. • To dominate the data structures. • Learning and using of the tree data model structures that are frequently used in the market. • Realization of all topics using the Java programming language.

Methodology for the implementation of educational topics:
Lecture: PowerPoint presentation and problem solving. Discussion on the topics in the form of a question and answer, conducting research on the topics covered problem solving and project preparation.

Conditions for realization of educational topics:
It is assumed that students in this course know one of the Object-Oriented programming languages (Java, C ++, C #) or one of the procedural programming languages (C, Pascal). Things to know: Basic data types (int, float) Control structure (if else structure) Loops, Functions Input output operations, Simple level arrays and classes.

Ways of assessing of the student (in %) :	Evaluation in%	Final grade	
		51-60%-	6
HomeWork / Practice lesson	%10	61-70	7
Midterm	%40	71-80	8
Final exam	%50		
		81-90	9
Total	**100.00 %**	91-100	10

Obligations of student:	
Lectures	**Exercises**
The student is obliged to follow the courses and practice course. They have to come prepared for the lesson based on the resources determined by the professor. During the course, students must actively contribute to improve the quality of the course. The rules and ethical principles required by the university and higher education should be taken into consideration.	Students, for the practical course, by the professor on the topics covered in the course of the course to practice exercises and to prepare homework within the subject.

Activities	Hour/ weeks	Days/Weeks	
Lectures	2	15 weeks	30 hour
Laboratory exercises	2	15 weeks	30 hour
Contacts with teachers / consultations	0,5	15 weeks	7.5 hour
Practical work	0,5	15 weeks	7.5 hour
Projects, presentations, etc.	1	15 weeks	15 hour
Own study time	1	15 weeks	15 hour
Preparation for final exam	1	15 weeks	15 hour
Time spent in the assessment (tests, final exam, etc.)	2	15 weeks	30 hour

Notice: 1 ECTS credits= 25 hour commitment, e.g. if the subject has 6 ECTS credits student must have 150 hours during the semester commitment.	**Total load:**	**150**

Week	Lectures	Hour	Exercises	
	Topic		Topic	
1-2	1. Data Structures and Data Models 2. Algorithmic program design and analysis	4	Performing a sample application on Java using Java programming language eclips.	4
3	3. Runing time analysis Algorithm analysis	2	Performing execution and algorithm analysis on sample applications with eclips in Java programming language.	2
4-5	4. Complexity. Large oh (Big-oh) Notation It is notation the asymptotic upper bound is the worst case. 5.The notation of the asymptotic upper limit	4	Prove the accuracy over the sample expressions. To write the time spent by the functions according to the Notation and prove the accuracy of the condition.	4
6-7	6. Binary search 7. lists: Linear lists,linked list,One way linked list, bi-directional linked list, Circular list	4	Binary search, Lists, Example problem solving java	4
8	Midterm	2	Midterm	2
9-10	9. Stack. 10.Directory based stack,Stack and operations, Stack linked list implementation.	4	Example of Java programming language eclips with the implementation of the application of Stack Stack.	4
11-12	11. Infix, Postfix, Prefix impressions. 12. Queue (Queue), Insertion / Extraction. Priority queues. linked list with queue.	4	Example of Java programming language eclips with queue application implementation, add / subtract, queued samples with linked list.	4
13-14	13. Recursive. 14. Hashing, Tree data model.	4	Sample recursion application with Java programming language eclips, Hashing application and Tree application implementation.	4
15	Final Exam	2	Final Exam	2

LITERATURE:

1. Erkan Tanyıldız.(2015). "Algoritmalar ve Veri yapıları", Endüstri Mühendisliği Bölümü Üretim Yazılımları Laboratuarı, Çukurova Üniversitesi.
2. http://akademik.duzce.edu.tr/Content/Dokumanlar/gunaytemur/Dosya/692d88ba-7b04-4a57-accc-0956288de1f8.pdf. 2016/2017.
3. http://www.e-adys.com/adys/OpenCourse/Course/BMB204--Veri-Yap%C4%B1lar%C4%B1/91. 2016/2017.
4. http://web.itu.edu.tr/~gulsenc/dersler/btveri/h1.pdf.
5. Çölkesen R.,"Veri yapıları ve Algoritmalar"Papatya Yayıncılık, İstanbul.

NOTICE:

- ✓ In general, the course will be run with Power Point and other resources.
- ✓ In addition, the Professor will provide additional resources other than the main sources (scientific studies, reports, national and international published articles).

Notice for the student:

- ✓ It is necessary to enter the course on time and prepared.
- ✓ other than this, students cannot enter the course.
- ✓ 80% attendance is required during the semester.
- ✓ In the course, discussion, ask questions, feedback, subject and presentation, taking an active role in the applications.
- ✓ Voice recorder, telephone, etc. The use of such devices is prohibited.