

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
FZK-2012	Programming with C in Physics	2.00	2.00	0.00	3.00	7.00
Course Detail						
<b>Course Language</b>	: Turkish					
<b>Qualification Degree</b>	: Bachelor					
<b>Course Type</b>	: Optional					
<b>Preconditions</b>	: Not					
<b>Objectives of the Course</b>	: Analyzing the mathematical problems and processes in the field of physics by using C programming language. It contains creating algorithm by analysing the problems, developing the C programs.					
<b>Course Contents</b>	: Introduction to Programming Languages Algorithm and Flowcharts Variables and Constants ,Decision and Looping Structures in Algorithm and Flowcharts.,Algorithm to C. Introduction to Software Development in C. ,Introduction to C: Syntax. Words, definations and data types belongs to C. Libraries, Variables, Constants. ,C language Assignment Input/Output Commands Operators Mathematic Library ,Decission Structes in C: lf...else Structers Nested if lf-else pairing Question mark switch ,Repeating/Looping Structers in C: while looping operators Structers do-while ,Repeating/Looping Structers in C: for Nested loops break and continue.					
<b>Recommended or Required Reading</b>	: 1) Basic C Lessons , N. Ercil Çağltay, C. Fügen Selbes, Gül Tokdemir, Çiğdem Turhan, Ada Press, 2009 2) C Language , Rifat Çölkesen, Papatya Press , 2000 3) C Language , Yalçın Özkan, Alfa Press , 2003 4) Learning C Language (2. Press), Yorulmaz, M., Yorulmaz, S. (2005), Palme Press, Ankara					
<b>Planned Learning Activities and Teaching Methods</b>	: Lecture, Homework, Discussion, Practice					
<b>Recommended Optional Programme Components</b>	: It is recommended that the student perform regular repetition and practice.					
<b>Instructors</b>	: Prof. Dr. Faruk Soyduğan					
<b>Instructor's Assistants</b>	: Not necessary.					
<b>Presentation Of Course</b>	: Oral presentation, Direct application in Computer Lab.					

## Course Outcomes

## Upon the completion of this course a student :

- 1 Arrange decision and looping structures in algorithm and follow charts.
- 2 Uses decision and looping structures in algorithm and follow charts.
- 3 Recognize programming languages and comprehend theirs levels, know defination of the variable and constant.
- 4 Convert algorithm and flowchart to C language and develop the C code.
- 5 Compile and run the C code.
- 6 Write the C code by using syntax.
- 7 Use C language commands and learn arithmetic, relational functions , logical and bit operators.
- 8 Study with functions of mathematical library.
- 9 Learn conditions and loops in C.
- 10 Learn and use to write functions in C.
- 11 Learn pointers and strings in C.

## Preconditions

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Weekly Contents					
	<b>Theoretical</b>	<b>Practice</b>	<b>Laboratory</b>	<b>Preparation Info</b>	<b>Teaching Methods</b>
1.Week	*Introduction to Programming Languages Algorithm and Flowcharts Variables and Constants	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
2.Week	*Decision and Looping Structures in Algorithm and Flowcharts. Algorithm to C. Introduction to Software Development in C.	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
3.Week	*Introduction to C: Syntax. Words, definitions and data types belongs to C. Libraries, Variables, Constants.	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
4.Week	*C language Assignment Input/Output Commands Operators Mathematic Library	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
5.Week	*Decision Structures in C: If...else Structures Nested if-else pairing Question mark switch	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
6.Week	*Repeating/Looping Structures in C: while looping operators Structures do-while	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
7.Week	*Repeating/Looping Structures in C: for Nested loops break and continue	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
8.Week	*General Practice on Repeating/Looping Structures in C	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
9.Week	*General Review, Midterm exam	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
10.Week	*Functions in C: Definition and declaration of functions No Value Returning Functions Value Returning Functions	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
11.Week	*Functions in C: Functions with parameters Variable Coverage Programs with Many Functions	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
12.Week	*Pointers in C Definition of Pointers Pointer Operators (& and *) Study with Pointers	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
13.Week	*Strings in C Definition of Strings String Assignments Strings and Pointers 2-Dimensional Strings	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.
14.Week	*Using Functions, Pointers and Strings together in C General Practice	*The theoretical subject of the related week is applied in the computer laboratory.	*The theoretical subject of the related week is applied in the computer laboratory.	*Weekly pre-work from the proposed sources will be appropriate.	*Oral presentation and direct application in Computer Laboratory.

Assesment Methods %
1 Final : 60.000
2 Vize : 30.000
3 Kisa Sinav : 10.000

ECTS Workload			
<b>Activities</b>	<b>Count</b>	<b>Time(Hour)</b>	<b>Sum of Workload</b>
Vize	1	2.00	2.00
Ödev	14	1.00	14.00
Kisa Sinav	2	2.00	4.00
Final	1	2.00	2.00
Attending lectures	14	4.00	56.00
Application / Practice	14	2.00	28.00
Individual study before lecture	14	1.00	14.00
Individual study after lecture	14	2.00	28.00
Preparation for midterm	4	4.00	16.00
Preparation for final	5	4.00	20.00
Preparation for quizzes	2	0.00	0.00
Further Study	14	1.00	14.00
Total :			198.00
Sum of Workload / 30 ( Hour ) : 7			

