Course Code	Course Type	Regular Semester	Lecture (hours/we ek)	Seminar (hours/we ek)	Lab. (hours/we ek)	Credits	ECTS	
CMP 114	А	Spring	3.00	0.00	1.00	3.50	5.00	
	1		1	1	1		1	
	Lecturer	Olsi Shehu, MSc						
	Assistant							
Coui	rse language	Albanian						
Course level		Bachelor						
	Description	The course "Obje conception and in Programming (OC is incorporated in through this cour that OOP in creat address a brief o concepts of OOP, structures, classe operations in ger	mplementation DP) is one of the almost all high rese students we ting modular a verview of the its implement es, pointers an	n of object-ori he foremost a gh level progra ill be able to u pplications and functions and tation method	ented prograr nd most impo amming langu understand th nd programs. d then address ls and tools su	nming. Objec rtant techniq lages. In this e importance This course w s in detail the lich as enume	t Oriented ues which context, and impa vill first basic erations,	
	Objectives							
Core Concepts		Inheritance, Polymorphism, Abstraction, Encapsulation, Functions, Objects, Classes, Enumerations, Structures, Pointers and Files.						
ourse Outlir	ne							
Week				Торіс				
1	programming knowledge or	to Object Oriented Programming This topic addresses a general overview of object g. The main concepts of Object Oriented Programming, review and completion of n functions, inline and macro functions, overloaded functions and various models o be important parts of this topic. (Pages 101 - 123, Recommended reading)						
2	implementation several enum with enumera	5 This topic deals with the definition and use of enumeration (group), on of conditional structures through numbered values, definition and declaration of perated variables of the same type, direct association of values, different actions ated values, use of enumerations in loops, creating several enumerations ly and using them in subroutines. (Pages 4 - 32)						
3	objects, the d during and af of association	his topic deals with the definition of structures and the declaration of relevant direct initialization with values of variables included in the components of structures after the declaration of relevant objects, access to the components of structures, use on operation and relational operators and declaration and utilization of several imultaneously. (Pp. 33-69)						
4	the componer parameters of	is topic deals with nested structures, the definition and use of functions included in nts of structures, the definition of functions outside structures, structures as f functions, the use of arrays within structures, the declaration and use of arrays of lustrative examples for all the topics above. (Pp. 70 - 132)						
5	to class comp forms of initia of functions w program and	is topic deals with the definition of classes and the declaration of their objects, access mponents, general form of classes, definition of functions outside the classes, differer itialization of objects, use and calculations with public and private class variables, use is without formal parameters and with reference parameters, calculations in the nd through class functions as well as display of results in program variables and class (Pages 133 - 163)						

6	Classes This topic deals with the use of functions within the class, functions as public and private components, constructors with and without formal parameters, calculations within them, the use of several constructors simultaneously, calling based on the number of parameters and based on the type of parameters and destructors. (Pages 164 - 190)				
7	Classes This topic deals with inheritance, the definition of functions outside the classes and the use of Protected members, multiple inheritance, different actions with classes, the use of fields with and through classes, and the visibility of classes and objects. (Pages 191 - 217)				
8	Midterm Exam				
9	Pointers This topic covers Pointers and how to use them. This topic deals in detail with pointer declaration, variable addresses, variable address value, associated values of constants and variables, inverse operators, pointer value calculations, operating with pointer values, increasing and decreasing values, and associating and comparing of values. (Pages 217 - 241)				
10	Pointers This topic deals with pointers when operating with fields (vectors, matrices), various operations with them, pointers in strings, pointers as function parameters, pointers in functions, structures and their use in variables and functions of class objects. (Pages 241 - 295)				
11	References This topic deals with common references, reference constants, formal reference parameters, reference parameters as outputs, reference vectors and matrices, constraints on reference variables, reference parameters within structures, reference variables within classes, and reference objects. (Pages 296 - 316)				
12	Files This topic deals with sequential access files, file writing, intermediate memory, file reading, file opening control, object declaration before opening, accessing, writing and reading files in loops, using manipulators, state flags as well as writing and reading in a program, using objects, texts and numbers in files, using pointers, reading rows and reopening files in different states. (Pages 316 - 359)				
13	Files This topic deals with reading the current position in the file, accessing and moving the file, reading from the files, values of variables, vectors, matrices and calculated values in the file, accessing and using data from files, objects and their access to files as well as several files open simultaneously. (Pages 360 - 404)				
14	Practical Problems This topic discusses some practical problems in the object-oriented programming as random numbers, time calculations, text color, visibility of variables, pointers, references, preprocessor directives, some exceptions and issues regarding reading / writing to files. (Pages 212 - 266, Recommended reading) (Edited)Restore original				
15	General Revie	w			
16	Final Exam				
	Prerequisites	The student must attend the course at a minimum rate of 75%.			
	Literature	 Programimi i Orientuar në Objekte në C++, Agni Dika, Tetovë, 2008 Programimi i Orientuar në Objekte në C++, Agni Dika, Tetovë, 2008 			
	References	 Gjuhë Programuese me shembuj në C++, Prishtinë, 2018 C++ How to Program, 9th Edition, Deitel & Deitel, Pearson, 2014 			
Course Outco	ome				
1	Studentët do t	ë jenë të aftë të kuptojnë evolimin e P.O.O. në gjuhët e programimit moderne.			
2	Studentët do të kenë njohuri mbi konceptet kryesore të P.O.O.				
3	Studentët do të përvetësojnë metodat dhe teknikat kryesore të P.O.O.				
4	Studentët do të jenë të aftë të implementojnë metodat dhe teknikat kryesore të P.O.O.				
5	Studentët do të jenë të gatshëm për t'u bërë pjesë e diskutimeve të frytshme në fushën e evolimit të metodave dhe teknikave kryesore të P.O.O.				
6	Studentët do të jenë të pajisur me metodat dhe teknikat e mjaftueshme të P.O.O. për të vijuar me lëndët e tjera pasardhëse.				

Course Evaluation			
In-term Studies		Quantity	Percentage
Midterms		1	30
Quizzes		0	0
Projects		1	30
Term Projects		0	0
Laboratory		0	0
Class Participation		0	0
Total in-term evaluation percent			
Final exam percent			40
Total			100
ECTS Workload (Based on Student Work	(load)		
		Duration	

Activities	Quantity	Duration (hours)	Total (hours)	
Course duration (Including the exam week: 16x Total hours of the course)	16	4	64	
Study hours outside the classroom (Preparation, Practice, etc.)	14	4	56	
Duties	1	0	0	
Midterms	1	2	2	
Final Exam	1	3	3	
Other	0	0	0	
Total Work Load				
Total Work Load / 25 (hours)				
ECTS				