

Course description

Course abbreviation:	KID/YCPAP	Page:	1 / 3
Course name:	Algorithm and programming practicum		
Academic Year:	2023/2024	Printed:	04.06.2024 13:06

Department/Unit /	KID / YCPAP			Academic Year	2023/2024
Title	Algorithm and programming practicum			Type of completion	Course-credit
Accredited/Credits	Yes, 3 Cred.			Type of completion	Combined
Number of hours	Seminar 12 [Hours/Semester]			Course credit prior to	NO
Occ/max	Status A	Status B	Status C	Counted into average	NO
Summer semester	0 / -	0 / -	40 / -	Min. (B+C) students	not determined
Winter semester	0 / -	0 / -	0 / -	Repeated registration	NO
Timetable	Yes			Semester taught	Summer semester
Language of instruction	Czech			Internship duration	0
Optional course	Yes				
Evaluation scale	S\N				
No. of hours of on-premise	0				
Auto acc. of credit	No				
Periodicity	K				
Substituted course	KID/DPZPK				
Preclusive courses	KID/XCPAP				
Prerequisite courses	N/A				
Informally recommended courses	N/A				
Courses depending on this Course	N/A				

Course objectives:

The subject is focused on deepening and practical mastering of the subject matter Algorithm Development and Programming. It is designated mainly for students without sufficient practical experience with algorithm development, with programming in C# language and with creating simple console as well as window applications in the Microsoft Visual Studio environment.

Requirements on student

Given assignment confirms that a student has attended lessons to the extent required and fulfilled qualified requirements. Conditions for credit are: active work at exercises, min. 75% presence.

Content

Introduction to the course. Algorithm and its notation. Program structure, local variable and constant declaration, basic operation with numbers, data input and output.
 Operators and expressions. Summary of statements. Block and if statement. Algorithms with branching.
 Switch statement. Algorithms with branching. Methods for mathematical operation.
 Iteration statements. Algorithms with iterations without arrays.
 Value data types. Enum type. Conversion among data types.
 Data type array. One dimensional array. Operations with strings. Generating random numbers.
 Algorithms with one dimensional arrays. Program debugging.
 Multidimensional array. Algorithms for work with matrix.
 Subroutines, static method declaration, parameters, method calling.
 Classes - signification, declaration, instantiation, using.
 Text files - classes for work with files, data reading and writing.
 Additional C# language options, form application programming.

Prerequisites - other information about course preconditions

Competences acquired

After finishing this course students will be able to design and realize algorithms of basic problems in Visual Studio IDE.

Fields of study**Guarantors and lecturers**

- **Guarantors:** Ing. Stanislav Machalík, Ph.D. (100%)
- **Seminar lecturer:** Ing. Stanislav Machalík, Ph.D. (100%)

Literature

- **Recommended:** Greiner, Karel. *Studijní materiály z přednášek a cvičení předmětu Algoritmizace a programování.*

Teaching methods

Monologic (reading, lecture, briefing)
 Methods of individual activities
 Demonstration
 Graphic and art activities

Assessment methods

Student performance assessment

Course is included in study programmes:

Study Programme	Type of	Form of	Branch	Stage	St. plan v.	Year	Block	Status	R.year	R.
Transport Equipment	Bachelor	Part-time	Electric Traction and Electromobility	1	2023	2023	Volitelné předměty	C	1	LS
Transport Equipment	Bachelor	Part-time	Electric Traction and Electromobility	1	2022	2023	Volitelné předměty	C	1	LS
Transport Equipment	Bachelor	Part-time	Electric Traction and Electromobility	1	2021	2023	Volitelné předměty	C	1	LS
Transport Equipment	Bachelor	Part-time	Operation and Maintenance of Vehicles	1	2023	2023	Volitelné předměty	C	1	LS
Transport Equipment	Bachelor	Part-time	Operation and Maintenance of Vehicles	1	2022	2023	Volitelné předměty	C	1	LS
Transport Equipment	Bachelor	Part-time	Operation and Maintenance of Vehicles	1	2021	2023	Volitelné předměty	C	1	LS
Transport Equipment	Bachelor	Part-time	Vehicle Design	1	2023	2023	Volitelné předměty	C	1	LS
Transport Equipment	Bachelor	Part-time	Vehicle Design	1	2022	2023	Volitelné předměty	C	1	LS
Transport Equipment	Bachelor	Part-time	Vehicle Design	1	2021	2023	Volitelné předměty	C	1	LS
Transport Technology and Communications	Bachelor	Part-time	Electrical Engineering and Electronic Systems in Transport	1	2016	2023	1.ročník Bc KS ESD volitelné	C	1	LS
Transport Technology and Communications	Bachelor	Part-time	Transport Management, Marketing and Logistics	1	2016	2023	1.ročník Bc KS volitelné	C	1	LS
Transport Technology and Communications	Bachelor	Part-time	Transport Technology and Control: Logistics Technologies	1	2016	2023	1.ročník Bc KS TRD-LT volitelné	C	1	LS

Study Programme	Type of	Form of	Branch	Stage	St. plan	v. Year	Block	Status	R.year	R.
Transport Technology and Communications	Bachelor	Part-time	Transport Technology and Control: Technology and Control of Transport Systems	1	2016	2023	1.ročník Bc KS TRD-DS volitelné	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Logistics	1	2022	2023	Volitelné předměty	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Logistics	1	2021	2023	Volitelné předměty	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Logistics	1	2023	2023	Volitelné předměty	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Logistics	1	2020	2023	Volitelné předměty	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Transport Management and Marketing	1	2022	2023	Volitelné předměty	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Transport Management and Marketing	1	2021	2023	Volitelné předměty	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Transport Management and Marketing	1	2023	2023	Volitelné předměty	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Transport Management and Marketing	1	2020	2023	Volitelné předměty	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Transport Technology and Control	1	2020	2023	Volitelné předměty	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Transport Technology and Control	1	2021	2023	Volitelné předměty	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Transport Technology and Control	1	2022	2023	Volitelné předměty	C	1	LS
Transport Technology and Management	Bachelor	Part-time	Transport Technology and Control	1	2023	2023	Volitelné předměty	C	1	LS