

Course description

Course abbreviation:	KI/DIS	Page:	1 / 2
Course name:	Dependability of Information Systems		
Academic Year:	2014/2015	Printed:	26.04.2024 19:13

Department/Unit /	KI / DIS			Academic Year	2014/2015
Title	Dependability of Information Systems			Type of completion	Exam
Accredited/Credits	No, 3 Cred.			Type of completion	Combined
Number of hours	Přednáška 2 [HOD/TYD]				
Occ/max	Status A	Status B	Status C	Course credit prior to	YES
Summer semester	0 / -	0 / -	0 / -	Counted into average	YES
Winter semester	16 / -	0 / -	0 / -	Min. (B+C) students	not determined
Timetable	Yes			Repeated registration	NO
Language of instruction	Czech, English			Semester taught	Winter, Summer
Optional course	Yes			Internship duration	0
Evaluation scale	1 2 3 4			Ev. sc. – cred.	S N
No. of hours of on-premise					
Auto acc. of credit	No				
Periodicity	K				
Substituted course	None				
Preclusive courses	N/A				
Prerequisite courses	KI/APR1				
Meet all prerequisites before registering					NO
Informally recommended courses	N/A				
Courses depending on this Course	N/A				

Course objectives:

The course gives basic knowledge needed for understanding the occurrence of faults in computer systems, methods of system fault state handling and methods for providing software fault-tolerance.

The tasks of dependability are considered both for standalone applications and for distributed applications. Accidental and intentional malicious faults are also taken into consideration.

The course helps to percept the design of modern complex systems, gives mastery of basic skills required for the work of system administrator and system security analyst.

Requirements on student

Content

1. Dependability of SW systems.
2. Means for providing SW fault-tolerance.
3. N-variant programming and object-oriented programming.
4. Fault handling in N-variant programming.
5. Competitive and cooperative concurrent systems.
6. Conversations in distributed systems.
7. Coordinated atomic actions.
8. Dependability of distributed systems.
9. Using groups of objects for providing system fault tolerance.
10. Dependability with respect to malicious faults.
11. Web services, dependable composition of WSs.

10. Middleware-based fault tolerant systems.
11. Wrapping technology.

Prerequisites - other information about course preconditions

Teaching in English is meant only for erasmus and foreign students. In the case of a small number of students is teaching in a form of individual consultations.

Competences acquired

Fields of study

Guarantors and lecturers

- **Guarantors:** doc. RNDr. Mgr. Viktor Maškov, DrSc. (100%)
- **Lecturer:** doc. RNDr. Mgr. Viktor Maškov, DrSc. (100%)

Literature

- **Basic:** Laprie, J.C., ed. *Dependability: Basic concepts and terminology- in English, French, German, Italian and Japanese*. Springer-Verlag, Vienna, Austria, 1992.
- **Basic:** Laprie, J.C. *Dependability of software-based critical systems: in Dependable Network Computing*. Kluwer Academic Publishers, 1999.
- **Basic:** Embedded, Everywhere: A Research Agenda for Networked Systems of. *Embedded, Everywhere: A Research Agenda for Networked Systems of*. Washington D.C., Computer Science and Technology Board, National Academy of Science, 2001.

Teaching methods

Assessment methods

Course is included in study programmes:

Study Programme	Type of	Form of	Branch	Stage	St. plan v.	Year	Block	Status	R.year	R.
Applied Informatics	Bachelor	Full-time	Information Systems	1	A12	2014	Povinné předměty	A	3	ZS
Applied Informatics	Bachelor	Full-time	Information Systems	1	A13	2014	Povinné předměty	A	3	ZS
Applied Informatics	Bachelor	Full-time	Information Systems	1	A11	2014	Povinné předměty	A	3	ZS
Applied Informatics	Bachelor	Full-time	Information Systems	1	A8	2014	Povinné předměty	A	3	ZS
Mathematics	Bachelor	Full-time	Mathematical informatics	1	A9	2014	Povinné předměty	A	3	LS