

Course description

Course abbreviation:	KI/OPT	Page:	1 / 2
Course name:	Optimization		
Academic Year:	2012/2013	Printed:	20.04.2024 10:43

Department/Unit /	KI / OPT			Academic Year	2012/2013
Title	Optimization			Type of completion	Exam
Accredited/Credits	No, 5 Cred.			Type of completion	Combined
Number of hours	Přednáška 2 [HOD/TYD] Seminář 2 [HOD/TYD]			Course credit prior to	YES
Occ/max	Status A	Status B	Status C	Counted into average	YES
Summer semester	24 / -	0 / -	0 / -	Min. (B+C) students	not determined
Winter semester	0 / -	0 / -	0 / -	Repeated registration	NO
Timetable	Yes			Semester taught	Winter, Summer
Language of instruction	Czech, English			Internship duration	0
Optional course	Yes			Ev. sc. – cred.	S N
Evaluation scale	1 2 3 4				
No. of hours of on-premise					
Auto acc. of credit	No				
Periodicity	K				
Substituted course	None				
Preclusive courses	N/A				
Prerequisite courses	KMA/P110 or KMA/P123 or KMA/P136				
Meet all prerequisites before registering	YES				
Informally recommended courses	KMA/P231				
Courses depending on this Course	and KMA/P232 and KI/NME N/A				

Course objectives:

Aim of this course is to familiarise students with particular examples of optimization-methods application. They will gain knowledge of some types of optimization problems solution. Importance is set to solution of linear and non-linear programming problems.

Requirements on student

Content

1. Classification of optimization problems.
2. Derivative and non-derivative problems.
3. One-dimensional optimization problems.
4. Multi-dimensional optimization problems.
5. Linear optimization problems.
6. Simplex method.
7. Transportation problem.
8. Minimal squares method.
9. Non linear optimization problems with restrictions.
10. Non linear optimization problems without restrictions.

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:** RNDr. Petr Kubera, Ph.D. (100%)
- **Lecturer:** RNDr. Petr Kubera, Ph.D. (100%)
- **Seminar lecturer:** Mgr. Květuše Sýkorová (100%)

Literature

- **Basic:** Míka S. *Matematická optimalizace*. ZČU Plzeň, 1997.
- **Basic:** Jablonský J. *Operační výzkum*. VŠE, Praha, 1999.
- **Basic:** Klvaňa J. *Vybrané statě z operačního výzkumu*. ČVUT, Praha, 2001.
- **Extending:** Maňas M. *Optimalizační metody*. SNTL, Praha, 1987.
- **Recommended:** Maňas M. *Nelineární programování*. SPN, Praha, 1979.

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	A11	2012	Povinné předměty	A	3	ZS
Applied Informatics	Bachelor	Full-time	Information Systems	1	A12	2012	Povinné předměty	A	2	LS
Applied Informatics	Bachelor	Full-time	Information Systems	1	A8	2012	Povinné předměty	A	3	ZS