Course description

Department/Unit /	KI / PGL2			**Academic Year**	2012/2013
Title	Programming II			**Type of completion**	Exam
Accredited/Credits	No, 6 Cred.			**Type of completion**	Combined
Number of hours	Přednáška 2 [HOD/TYD] Seminář 3 [HOD/TYD]				
Occ/max	Status A	Status B	Status C	**Course credit prior to**	YES
Summer semester	82 / -	0 / -	0 / -	**Counted into average**	YES
Winter semester	0 / -	0 / -	0 / -	**Min. (B+C) students**	not determined
Timetable	Yes			**Repeated registration**	NO
Language of instruction	Czech, English			**Semester taught**	Summer semester
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/PGL1				
Meet all prerequisites before registering	NO				
Informally recommended courses	N/A				
Courses depending on this Course	KI/GUI, KI/OON, KI/PGL3, KI/PIN, KI/PIN1, KI/PMP, KI/VPW, KI/XPIN1				

Course objectives:

The second semester of the course of basic programming. This part of course is focused to application of main design patterns and more detailed knowledge of programming language and basic libraries.

Requirements on student

Content

1. properties : encapsulation, getters and setters, object states
2. shared interface: interface, polymorphism, library interfaces
3. inheritance : reusability of code, inheritance vers. composition
4. basic design patterns: abstract factory, factory method, bridge, decorator, state, etc.
5. sharing on class level : static fields and methods
6. collections (specialized colecctions, iterators)
7. exceptions (throwing and catching of exceptions)
8. reflection (RTTI, plugins)
9. generics (simple generic class and interfaces)

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:** Mgr. Jiří Fišer, Ph.D. (100%)
- **Lecturer:** Mgr. Jiří Fišer, Ph.D. (100%)
- **Seminar lecturer:** RNDr. Jan Krejčí, Ph.D. (100%), RNDr. Petr Kubera, Ph.D. (100%)

Literature

- **Basic:** Troelsen A. *C# a .NET profesionálně*. Zoner Press, 2007.
- **Basic:** Eckel B. *Thinking in Java (3rd edition)*. Prentice Hall PTR, 2002.
- **Extending:** Virius M. *C# pro zelenáče*. Neocortex, 2007.
- **Extending:** Albahari J., Albahari B. *C# 3.0 in a Nutshell: A Desktop Quick Reference*.
- **Extending:** Gamma E. a kol. *Design patterns - Elements of Reusable Object-Oriented Software*. Addison-Wessley Professional, 1995.
- **Extending:** Pecinovský R. *Návrhové vzory*. Computer Press, Praha, 2007.

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	A8	2012	Povinné předměty	A	1	LS
Applied Informatics	Bachelor	Full-time	Information Systems	1	A11	2012	Povinné předměty	A	1	LS
Applied Informatics	Bachelor	Full-time	Information Systems	1	A12	2012	Povinné předměty	A	1	LS
Geography	Bachelor	Full-time	Information Sciences (double subject)	1	A6	2012	Povinné kurzy	A	1	LS
Geography	Bachelor	Full-time	Information Sciences (double subject)	1	A10	2012	Povinné předměty	A	1	LS
Chemistry	Bachelor	Full-time	Informatics	1	A6	2012	Povinné kurzy	A	1	LS
Chemistry	Bachelor	Full-time	Informatics	1	A10	2012	Povinné předměty	A	1	LS
Chemistry	Bachelor	Full-time	Informatics Focused on Education	1	A10	2012	Povinné kurzy	A	1	LS
Informatics	Bachelor	Full-time	Informatics Focused on Education	1	A7	2012	Povinné kurzy	A	1	LS
Informatics	Bachelor	Full-time	Informatics Focused on Education	1	A10	2012	Povinné kurzy	A	1	LS
Informatics	Bachelor	Full-time	Information Sciences (double subject)	1	A8	2012	Povinné kurzy	A	1	LS
Informatics	Bachelor	Full-time	Information Sciences (double subject)	1	A10	2012	Povinné předměty	A	1	LS
Mathematics	Bachelor	Full-time	Informatics focused on Education	1	A10	2012	Povinné kurzy	A	1	LS
Mathematics	Bachelor	Full-time	Informatics focused on Education	1	A7	2012	Povinné kurzy	A	1	LS
Mathematics	Bachelor	Full-time	Information Sciences (double subject)	1	A10	2012	Povinné předměty	A	1	LS

Study Programme	Type of	Form of	Branch	Stage	St. plan v.	Year	Block	Status	R.year	R.
Mathematics	Bachelor	Full-time	Information Sciences (double subject)	1	A6	2012	Povinné kurzy	A	1	LS
Mathematics	Bachelor	Full-time	Mathematical informatics	1	A9	2012	Povinné předměty	A	1	LS
Mathematics	Bachelor	Full-time	Mathematics and its application in natural sciences	1	A12	2012	Povinné předměty	A	1	LS
Physics	Bachelor	Full-time	Informatics	1	A10	2012	Povinné předměty	A	1	LS
Physics	Bachelor	Full-time	Informatics	1	A6	2012	Povinné kurzy	A	1	LS
Physics	Bachelor	Full-time	Informatics focused on Education	1	A10	2012	Povinné kurzy	A	1	LS