Study programmes: Bachelor studies - Informatics	
Course name: P265 - Introduction to interactive theorem proving	
Lecturers: Filip Marić and other teachers of Department of Computer Science	
Status: Elective	
ECTS: 6	
Attendance prerequisites: None	
Course aims: Gaining introductory knowledge on interactive theorem proving using the proof assistant Isabelle/HOL.	
Course outcome: After the course, student can use the proof assistant Isabelle/HOL to formalize some simple mathematical theories and formally verify some basic algorithms.	
Course content: - Formal theorem proving and interactive theorem provers. - Natural deduction. Implementation in Isabelle/HOL. - Declarative proof formats - Isabelle/Isar. - Sets. Numbers. Functions. Relations. - Induction. - Elements of functional programming in HOL. Algebraic data types. - Some examples of formalization of mathematics in Isabelle/HOL. - Some examples of program verification in Isabelle/HOL.	
Literature: 1. Tobias Nipkow, Lawrence C. Paulson, Markus Wenzel: Isabelle/HOL, a proof assistant for Higher-Order Logic. 2. T. Nipkow: A Tutorial Introduction to Structured Isar Proofs. 3. Miran Lipovača: Learn You a Haskell for Great Good. (teacher can choose some other appropriate literature)	

Number of hours: **5**	Lectures: **2**	Tutorials: **3**	Laboratory: **-**	Research: **-**

Teaching and learning methods: Frontal, group, and practical.

Assessment (maximal 100 points)			
Course assignments	**points**	**Final exam**	**points**
Lectures	10	Written exam	-
Exercises / Tutorials	-	Oral exam	-
Colloquia	20	Written-oral exam	50
Essay / Project	20		