Paradigms of Programming Languages

Course description

Basic information

Field of study : Analytical Computer Science

Path : -

Organizational unit : Faculty of Mathematics and Computer Science

Level of education : first-cycle studies

Form of studies : full-time studies

Study profile : general academic

Mandatory status : optional

Education cycle : 2022/23

Course code : UJ.WMIIANS.1300.03365.22

Languages of instruction : Polish

Course related to scientific research : Yes

Disciplines : Computer Science

ISCED classification : 0613 Software and applications development and analysis

USOS code : WMI.TCS.PJP.S

Course coordinator

Grzegorz Herman

Course instructor

Grzegorz Herman

Period Semester 5, Semester 6	Form of verification of learning outcomes graded credit Form of teaching and hours seminar: 30	Number of ECTS credits 3.0

Learning outcomes for the course

Code	Effects in the area of	Major learning outcomes	Verification methods
Knowledge – The student knows and understands:			
W1	contemporary directions of development and achievements in the field of programming languages	IAN_K1_W05	presentation
Skills – The student can:			
U1	obtain and integrate information from scientific publications in English	IAN_K1_U24	presentation
U2	prepare an oral presentation of scientific results	IAN_K1_U21, IAN_K1_U23	presentation
Social competences – The student is ready to:			
K1	understand the limitations of their knowledge and the need for further education	IAN_K1_K05	presentation

ECTS credits balance

Student activity form	Average number of hours* dedicated to completed activity types
seminar	30
preparation of a paper	60

Total student workload	Number of hours 90	ECTS credits 3.0

* hour (lesson) means 45 minutes

Course content

No.	Course content		Learning outcomes for the course

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1.	"Paradigms of Programming Languages" is a seminar dedicated to programming language design and implementation. Students with a stronger theoretical inclination are invited to independently tackle the latest scientific results in this field (type systems, program correctness proofs, optimization, parallelization, etc.). For those interested in the practical side of the topic, we propose participation in an IT project related to programming language design and compiler implementation.	W1, U1, U2, K1

Extended information

Teaching methods:

seminar

Type of classes	Forms of credit	Course credit requirements
seminar	presentation	Attendance at the seminar. Understanding an English-language scientific paper and preparing a comprehensible oral presentation of the results described in it.

Prerequisites and additional requirements

1. Good knowledge of at least two programming languages. 2. Knowledge of x86_64 computer architecture. 3. Basic information about the program compilation process. 4. Passive knowledge of English at a level sufficient for independent reading of scientific texts. 5. Efficient use of formal mathematical notation. 6. Basic knowledge of functional programming (in any language) is welcome.

Literature

Required

1. (not applicable)