

REPORT

to occupy the academic position:

"Professor"	
"Associate Professor"	X
	one of the academic positions indicated shall be marked with the sign "X"

Candidates to occupy the position:

1	Ch. Assistant	PhD	Stefan	Mihailov	Filipov	UCTM
№	academic position	scientific degree	name	middle name	last name	workplace

Scientific area:

4.	Natural sciences, Mathematics and Informatics
code	name

Professional area:

4.6.	Informatics and Computer science
code	name

Scientific specialty:

Informatics

The competition has been announced:

34	11.04.2023	Informatics	Chemical and system engineering
in SG issue	date	for the needs of the Department	Faculty

The report was written by:

Assoc. prof.	PhD	Aleksandar	Dimov	Dimov	SU "St. Kliment Ohridski"
academic position	scientific degree	name	middle name	last name	workplace

1. Report for the candidate:

Ch. Assistant	PhD	Stefan	Mihailov	Filipov
academic position	scientific degree	name	middle name	last name

1.1. Meeting the minimum requirements under the Regulations:

A) The candidate meets the minimum requirements	20 points	X
B) The candidate doesn't meet the minimum requirements	0 points	
		one of the answers given is marked with the sign "X"

It must be filled in if answer B is marked. The publication activity of the candidate is analyzed. The response of the results achieved (quoted) is analyzed.
For the current procedure, the candidate submitted a monograph and 6 publications, all of them indexed in Scopus and Web of Science. All publications are co-authored, in four of them the candidate is listed as first co-author and in the other two – as second co-author. One of the publications is in Web of Science Q1. Also there are 8 citations of the candidate's works, all in the scientific database Scopus. According to the presented materials (together with the PhD degree that the candidate has obtained), the minimal national requirements for acquiring the position of associate professor are met.

1.2. Relevance of scientific and / or applied research:

A) The research is relevant. Part of the research is pioneering (no results are known on the topic by other authors)	8 points	
B) Research is relevant. Results from other authors are known for each of the topics and / or applications studied.	6 points	
C) Most of the research is relevant, but also some results are presented that have no scientific and / or applied value	4 points	X
D) The smaller part of the research is relevant	2 points	
E) Research is not relevant	0 points	
		one of the answers given is marked with the sign "X"

The evaluation of the relevance of the research must be substantiated.
<p>Main scientific work of the candidate is allocated into the following two areas:</p> <ul style="list-style-type: none"> • Approximation of functions and optimization • Numerical methods for boundary value problems for ordinary differential equations. <p>The research and research directions of the candidate are relevant. They are mainly in the field of mathematics and could have applications in different areas of informatics, such as algorithms and numerical methods. In the submitted publications for the competition for associate professor, it is reported about the Matlab implementation of the solutions to the tasks.</p> <p>One drawback in the layout of the documents prepared by the candidate is the lack of justification on how the results achieved by him could affect the professional direction of the current procedure.</p>

1.3. Objectives of the research:

A) Realistic and of scientific and / or applied interest	8 points	X
B) Realistic, but not of scientific and / or applied interest	4 points	
C) Unattainable (unrealistic)	0 points	
		one of the answers given is marked with the sign "X"

Objectives must be specified. The type of the set objectives must be justified
The objectives are related to solving problems for conditional optimization and approximation of functions, as well as numerical methods of nonlinear second order ordinary differential equations and integro-differential equations. The goals are realistic, the obtained results may find application in various fields of science and practice, including solving multidisciplinary applied tasks.

1.4. Candidate research contributions:

A) With lasting scientific and / or applied response, they form the basis for new research and applications	20 points	
B) They are of significant scientific and / or applied interest, complete and / or summarize previous research	16 points	
C) They are of scientific and / or applied interest	12 points	X
D) Lack of significant contributions	8 points	
E) Lack of contributions	0 points	
		one of the answers given

		is marked with the sign "X"
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Contributions must be specified. The type of results achieved must be justified.		
The applicant has stated the following contributions of his research work:		
<ul style="list-style-type: none"> • A measure is defined of functional similarity in form for solving certain optimization problems and function approximation problems. • Definition of a solution and procedure for solving approximation/optimization problems and systems of nonlinear equations. • Development of a technique for the numerical solution of Poisson and Laplace partial differential equations. • Development of a Monte-Carlo simulation algorithm for predicting fatal events in multicomponent systems. • Definition of a numerical method is proposed to replace the method of finite differences. • A constant-slope linearization method is proposed for solving nonlinear boundary value problems • A new Newton's shooting method is proposed for solving a certain type of nonlinear boundary value problems • A method for solving boundary value problems for nonlinear integro-differential equations is applied 		
All of the listed contributions are considered to be essential.		

1.5. Participation of the candidate in the achievement of the presented results:

A) The candidate has at least an equal participation in the submitted papers	8 points	X
B) The candidate has at least an equal participation in most of the submitted papers	7 points	
C) The candidate has a secondary participation in most of the submitted papers	4 points	
D) The candidate participation is unnoticeable	0 points	
		one of the answers given is marked with the sign "X"

Critical notes must be provided if one of the items C or D is marked.

1.6 Pedagogical activity:

A) The candidate has effective and sufficient pedagogical activity at the university. The textbooks issued are modern	8 points	X
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and useful (they meet the requirements of the Regulations). The work with undergraduate and doctoral students is at a high professional level.		
B) The candidate has sufficient pedagogical activity at the university. The textbooks issued satisfy the requirements of the Regulations.	6 points	
C) The pedagogical activity and / or textbooks issued are insufficient (do not meet the requirements of the Regulations)	0 points	
		one of the answers given is marked with the sign "X"

Critical notes must be provided if one of the items B or C is marked.

1.7. Critical notes:

A) Lack of critical notes	8 points	
B) Critical notes of a technical nature	7 points	X
C) Critical notes that would partially improve the results achieved in a small part of the research	5 points	
D) Critical notes that would partially improve the results achieved in most of the research	3 points	
E) Significant critical notes	0 points	
		one of the answers given is marked with the sign "X"

Critical notes must be provided if one of the answers C, D or E is marked.
As already noted above, my main remarks are of a technical nature and are all related to the preparation of the documents for participation in the procedure for obtaining the position of associate professor. This way, they do not diminish the significance of the applicant's work.

1.8. Conclusion

A) The evaluation of the candidate's activity is POSITIVE	This evaluation is assigned to a total number of at least 50 points	X
B) The evaluation of the candidate's activity is NEGATIVE	This evaluation is assigned to a total number below 50 points	
		one of the answers given is marked with the sign "X"

To be filled in if requested by the member of the scientific jury

The documents submitted by Stefan Filipov for the current procedure meet the minimum national legislation requirements in Bulgaria for the acquiring the position of "associate professor" in the scientific field 4. Natural sciences, mathematics and informatics and professional direction 4.6. Informatics and Computer Science.
In particular, the total result according to this report template is 67 points.

28.07.2023	The report was written by:	
date		signature