

UNIVERSITY OF FORESTRY

OPINION

from

Assoc. Prof. Galin Iliev Milchev, PhD

PhD in Scientific Specialty „Application of computer technology in economics“, Assoc. Prof. in professional field 3.7 „Administration and Management“, Scientific Specialty „Application of computer technology in economics“ /Informatics/, Department „Computer Systems and Informatics“ at „Business Management“ faculty at University of Forestry, **in the competition for occupation of the academic position of "Professor", in the field of higher education 3. Social, business and legal sciences, professional field 3.7 "Administration and Management", scientific specialty "Application of Computer Technology in Economics / Information Technology /, in the discipline "Information Technology", at the Department of Computer Systems and Informatics, Faculty of Business Management, University of Forestry - Sofia.**

Ground for the review: prepared in accordance with the decisions of the Scientific Jury, Protocol No. 1 / 10.03.2020, assigned by Order No. 67 / 17.02.2020, to the Rector of the University of Forestry - Sofia.

1. Overall evaluation of the conditions for competition for the academic position of "Professor"

In the competition for the academic position of "Professor", announced in the State Gazette, issue. 101 / 27.12.2019 and at the site of the University of Forestry for the needs of the Department of Computer Systems and Informatics at the Faculty of Business Management, PhD. Marina Petrova Mladenova, Assoc. Professor at the Department of Computer Systems and Informatics at the University of Forestry, Sofia, participates as a candidate.

The candidate completed her higher education in 1991 at the Technical University - Sofia, majoring in Electronic Engineering and Microelectronics, with a qualification in Electronics and Automation Engineering.

In 2009, at the University of Forestry - Sofia, she successfully defended her doctoral thesis on "Research and results from the use of information technologies in the furniture industry management", as a result of which she obtained a doctoral degree in scientific specialty 05.02.21 - " Organization and management of production / by industry and sub-sector /. After her scientific and teaching activity until now, as an assistant, senior assistant and chief assistant at the same university for the period 1996 - 2011, it is a natural and definitive channeling of the future development of Marina Mladenova's scientific activity in the field of information technologies.

Since 2011, after a competition for the needs of the Department of Computer Systems and Informatics, at the Faculty of Business Management, Dr. Marina Mladenova has been appointed as Assoc. Professor, which is proved by the diploma № LTU - AD - 2011 - 03 / 13.12 .2011, a position she still holds.

The candidate's work experience at the date of announcement of the competition is 23 years and 2 months, accumulated without interruption at the University of Forestry, during which time she takes a number of disciplines, including "Information Technologies I" and "Computer Design - CAD / CAM" systems , with students majoring in "Wood and Materials Technology", "Engineering Design", "Business management", Bachelor's and Master's Degrees.

The candidate for "professor" participates in the competition announced by the University of Forestry- Sofia with two monographs, as the sole author of both, which exceeds the requirements of Art.60 of the „Regulation for the implementation of the law for the development of the academic staff of the Republic of Bulgaria“. In the monographic studies, the author's participation is 474 pages. In the two monographs under Nos. B3-1 and No. G5-1 in the list of scientific and publication activities, I consider defended the scientific ones, related to problems of considerable importance to the economy, namely: job market dynamics with a cross-section at national, European and Global level, considering information technology as a tool for making rational decisions, using the capacity of human and computer, and the growing importance of the information approach to problems in managing economic systems. The scientific papers submitted by the applicant for the occupation of the academic position "Professor" for participation in the competition announced by the University of Forestry do not repeat the ones submitted for the occupation of the academic position "Associate Professor", and in quantitative terms exceed the minimum requirements of the "Regulation for the implementation of the law for the development of the academic staff of the Republic of Bulgaria“.

The competition for the academic position "Professor", applied for by Assoc. Prof. Dr. Marina Mladenova, is fully in accordance with the provisions of Art.60 of the "Regulation for the implementation of the law for the development of the academic staff of the Republic of Bulgaria“.

Summary: The review of the submitted materials for participation in this competition shows that the applicant meets the minimum requirements for occupation of the academic position of "Professor" in higher education 3. "Social, Business and Legal Sciences", professional field 3.7 " Administration and Management "and even goes beyond them.

2. General characteristics and evaluation of the applicant's scientific and applied production

The candidate Assoc. Prof. Marina Petrova Mladenova participates in the competition with 32 titles of scientific publications, realized after her habilitation as an associate professor. In the prepared documentation, they are arranged according to the classification of the " law for the development of the academic staff of the Republic of Bulgaria" and according to the requirements of NACID. Their distribution is as follows:

- Monographs - 2;
- Book - 1 issue;
- Textbooks - 3;
- Student aids - 5;

- Studio - 2 pcs.
- Publications in refereed scientific journals, abstracted and indexed in world databases - 2. (in foreign);
- Publications in non-refereed journals and collections of scientific forums - 17 issues.

Of the submitted scientific papers 13 pcs. are independent, 16 pcs. are with one co-author, 2 pcs. are with 2 co-authors and 1 pc. with three. Nine (9) of the 32 publications in total are in English and the rest in Bulgarian. The focus of all of them is related to the thematic areas of the scientific field 3. Social, Business and Legal Sciences.

Two of the scientific papers (№ Г5-1 and № B3-1) are methodical and scientific-methodological in nature. In the first, digital competencies and related concepts and European frameworks in this direction are methodically researched and analyzed in order to structure key information technologies that influence the formation of tomorrow's workforce skills in order to be competitive. Various specific skills, experience and work styles have been identified related to the digital transformation of the economy. The second analyzes the problem of information technology skills, which is a key factor in improving the imbalance in the labor market related to what is being sought for and what is currently being offered. According to the author, this problem can seriously affect the social bonding of society. The author synthesizes 10 key professional areas of development that emerged from the advancement of ICT. These include Big Data, Robotics, Informatics Security, Cloud Computing, and more. The status and problems associated with each are examined in the context of globalization and regionalization processes. Both their individual characteristics and the benefits of their use and their symbiotic impact on the labor market are clearly and reasonably defined.

The candidate list includes 3 textbooks: "Information Technologies Part I" and "Databases Lecture Course" - published in Bulgarian language intended for students in the specialties "Technology of Wood and Materials" and "Engineering Design"; "Informatics for Students of Veterinary Medicine" - published in English for the purpose of training foreign students in the specialty "Veterinary Medicine". Assoc. Prof. Marina Mladenova has presented 5 Students Aids in the documentation - 3 self-study and 2 co-authored for the purpose of training at the University of Forestry.

Publication (№ Г9-2) outlines the strengths and weaknesses of universities' rating systems and alumni organizations. This has been done through the lens of harmonization with European higher education systems and the creation of a pan-European research area. Assoc. Prof. Dr. Marina Mladenova conducts this research together with her doctoral student Diana Mladenova, who subsequently successfully defended her dissertation in 2016. The second studio publication (№ Г9-1) presents a study of the author in the field of services and categories of cloud computing, their characteristics, current status and development prospects.

The book "Economic evaluation of the results of the use of IT in the management and organization of production in furniture companies", part of the presented scientific production of the candidate, is a summary analysis of the furniture sector in the Republic of Bulgaria, operating in the field of furniture, which the author uses, as a basis for her methodology and system of indicators for economic evaluation of results, the use of IT in the processes of their management and production.

Seven (7) of the proposed scientific publications are related to the application of ICT in the economy. Eleven (11) are focused on ICT-related research for e-learning purposes. In another five (5),

the author's scientific interest in monitoring and evaluating indicators related to university rating systems is observed.

Summary: The presented scientific output, in volume, structure and content, presents the candidate for "Professor" Assoc. Prof. Marina Mladenova, as a graduate scientist in the field of the use of Information Technology in the areas of priority for her interests, related to the labor market, rating systems, cloud technology and e-learning. In this nearly 10-year process, the candidate demonstrates skills in both independent research and teamwork, a testament to the balanced distribution of independent and collectively developed research papers. Noted is her ability to systematize her own and her scientific knowledge, in the form of monographs, articles, reports and teaching aids. There is a good balance in the structure of scholarly works between books, articles and scientific reports, which, in volume (and corresponding points to the NACID system), far exceed the minimum required.

3. Reflection of the applicant's scientific publications in the literature (known citations)

The information provided by the candidate related to the citations of her work submitted for participation in the competition shows interest from colleagues in her scientific activity. This is reflected in 4 citations in scientific journals, abstracted and indexed in world-renowned databases, 28 citations in monographs and collective volumes with scientific review, and 2 citations in non-refereed journals. Of particular interest are the studies on the topics "The Role of Student Interaction Interface in Web-Based Distance Learning" and "Competitive Analysis of Software Solutions for Business Organizations". From the attached list, I do not accept posts with:

- No. D14-6 - cited in the manual;
- No. D14-10 - cited in guidance;
- No. D14-11 - cited in guidance;
- No. D14-12 - cited in guidance;
- No. D14-13 - cited in guidance;
- No. D14-15 - cited in textbook.

4. Pedagogical preparation, teaching, development and administrative activity

The candidate for the occupation of the academic position "Professor" Assoc. Prof. Dr. Marina Mladenova completes her secondary education at the Sofia Mathematical High School, specialty - programmer of EIM. Since the beginning of her scientific career in 1996, she has consistently passed through all teaching positions - assistant, senior assistant, chief assistant and associate professor, during all these periods she has been building her pedagogical preparation in tune with the new requirements and changing conditions. Proof of this are the innovative courses in all the subjects that the candidate has led or taught over the years, developed in the eLearning platforms used by University of Forestry - ELSE and MOODLE until 2014 and the BlackBoard Learn + platform used from 2014 till now. In developing these courses, the candidate's excellent pedagogical preparation is clearly evident, with which she is able to make the materials related to the subjects taught clear, easy to learn by students and with guaranteed sustainability. All of them are accessible to learners anytime, anywhere, with uploaded videos and additional interactive resources. The candidate's teaching activity is related to the

subjects she taught in "Information Technology Part I", "Computer Design of CAD / CAM Systems". The annual report in recent years shows that, on average, each year, she has delivered 364 hours of classroom work.

The development activity of Assoc. Prof. Dr. Marina Mladenova includes participation in a number of projects. Under her direction, a project was implemented as a result of which a "Virtual Laboratory for Innovation in Biological Resources Research and Training" was created. She is also the leader of another project aimed at introducing high-tech training and research methods at the University of Forestry. As a participant, she has always been involved in internal university projects and projects funded under operational programs in recent years.

In the administrative work of the candidate for the academic position of Professor, her role as an administrator of the website of the University of Forestry since 2011 cannot be overlooked.

Summary: The candidate for the competition Assoc. Prof. Marina Mladenova has accumulated the necessary pedagogical experience and I evaluate her teaching and pedagogical activity as meeting the requirements for obtaining an academic position of "Professor".

5. Evaluation of the applicant's contributions to the academic position of Professor

5.1. Scientific and methodological contributions

Based on a thorough analysis of the labor market in recent years, refracted through the prism of the exponential development of information technologies as the main type of innovation in the process of forming balanced development in terms of the distribution of the workforce, 10 key professional development areas are identified. The responsibilities, obligations and requirements for new jobs resulting from the rapid development of information technologies have been synthesized. On this basis, the most promising jobs in the future and the education that is suitable for them are determined.

(№ B3-1, Г5-1, Г8-1, Г8-3, Г8-4, Г8-7, Г8-12, Г9-1)

A very accurate interpretation of the essence of the concept of digital competencies and related terminology has been made, on the basis of which an Infogram tracing their historical development has been tested.

(№ Г5-1)

Based on a long-term study related to the use of the Alumni Network system at the University of Forestry, as well as on the basis of a solid questionnaire, the strengths and weaknesses of the rating systems and "Alumni organizations" were identified.

(№ Г7-1, Г8-2, Г8-6, Г8-14, Г9-2)

5.2. Scientific and applied contributions

A methodological toolkit has been created to take timely action to improve and sustain the values of key indicators for monitoring and analyzing university rating systems.

(№ Г7-1, Г7-2, Г8-6, Г8-9, Г8-14)

The „Balanced Card“ developed and tested to economize and evaluate the effectiveness of the activities of the University of Forestry, I do not consider as a scientific and methodological contribution, as indicated by the applicant, but as a scientific and applied one.

(№ Г8-9, E16-4)

Based on an analysis of the services and categories of cloud computing offered, a system was developed to assess the benefits and risks of using this type of technology from the perspective of the modern management paradigm for the trinity of economic, social and environmental aspects.

(№Г9-1)

5.3 Applied contributions

The developed and applied questionnaire "Working with the system", for feedback from the trainees, for assessing the impact of the learner-interface in web-based learning process on the achieved result, I do not accept as a scientific and methodological contribution, as indicated by the applicant, but as applied.

(№ Г7-2, Г8-3, Г8-5, Г8-12, Г8-16)

An online survey "Quality of Learning Resources" has been developed to provide feedback to learners, which is used as a corrective in the process of offering quality teaching resources that meet current educational trends and current demand in the specific subject area.

(№ E20-1, E20-2, E20-3, E21-1, E21-4, E21-5)

5.4. Contributions to the teaching activity

Tutorials have been developed applying modern ICTs for the education of students, doctoral students and practitioners in the fields of economics, forestry, ecology and environmental protection, agronomy.

(№ E20-1, E20-2, E20-3, E21-1, E21-2, E21-3, E21-4, E21-5, E16-1, E16-3, E16-5, E16-6, E16-7, E18-2)

Developed and implemented in the training is a unified structure of online courses using the BlackBoard Learn+, an e-learning platform with a system of complex assessment of learners based on weighting factors.

(№ E20-1, E20-2, E20-3, E21-1, E21-4, E21-5)

6. Critical notes

After a thorough study of the scientific works of Assoc. Prof. Dr. Marina Mladenova, I can summarize that there are no significant omissions and inaccuracies in them. As recommendations for the candidate's future work, I can suggest the following:

1. I recommend, in my future work as a scientist, that the applicant focuses her efforts on publishing in an impacted journal.
2. To develop in the work with future PhD students the basis for the sustainable use of electronic forms in the training process, an area in which the applicant has in-depth knowledge and skills.

7. Personal impressions

I can say of Assoc. Prof. Marina Mladenova that she is a serious, responsible, demanding and loyal person and a colleague who strives to constantly improve her qualification and contribute to the

development of the department and the university. Throughout our years of working together, she has established herself as one of the colleagues with whom we have always completed tasks or projects on time, without problems, and with understanding of the commitments made. A colleague always ready to respond when needed without creating tension. In addition to her duties as a teacher and researcher, she also performs a number of administrative activities that support the normal functioning of the university. Over the years, she has established herself as a very good lecturer, enjoying the respect of her colleagues and students.

8. Conclusion

Assoc. Prof. Dr. Mary Smith Mladenova is built lecturer and the presented scientific production and the attached documents fully comply with the scientometric indicators and requirements of Art. 29 of ZRARB, Art. 60 of the RAPRRSB and Art. 65 and 65a of the Rules for the development of academic staff at the University of Forestry. In connection with the above, I propose the candidate for the competition Assoc. Prof. Marina Petrova Mladenova TO BE SELECTED for the occupation of the academic position of "Professor" in the field of higher education 3. Social, Business and Legal Sciences, Professional Degree 3.7 "Administration and Management ", specialty" Application of Computer Science in Economics / Information Technologies /, in the discipline "Information Technology", to the Department "Computer Systems and Informatics" of the Faculty of Business Management at the University of Forestry.

25.04.2020 г.

Member of the Scientific Jury:.....

/ Assoc. Prof. Galin Milchev, PhD /