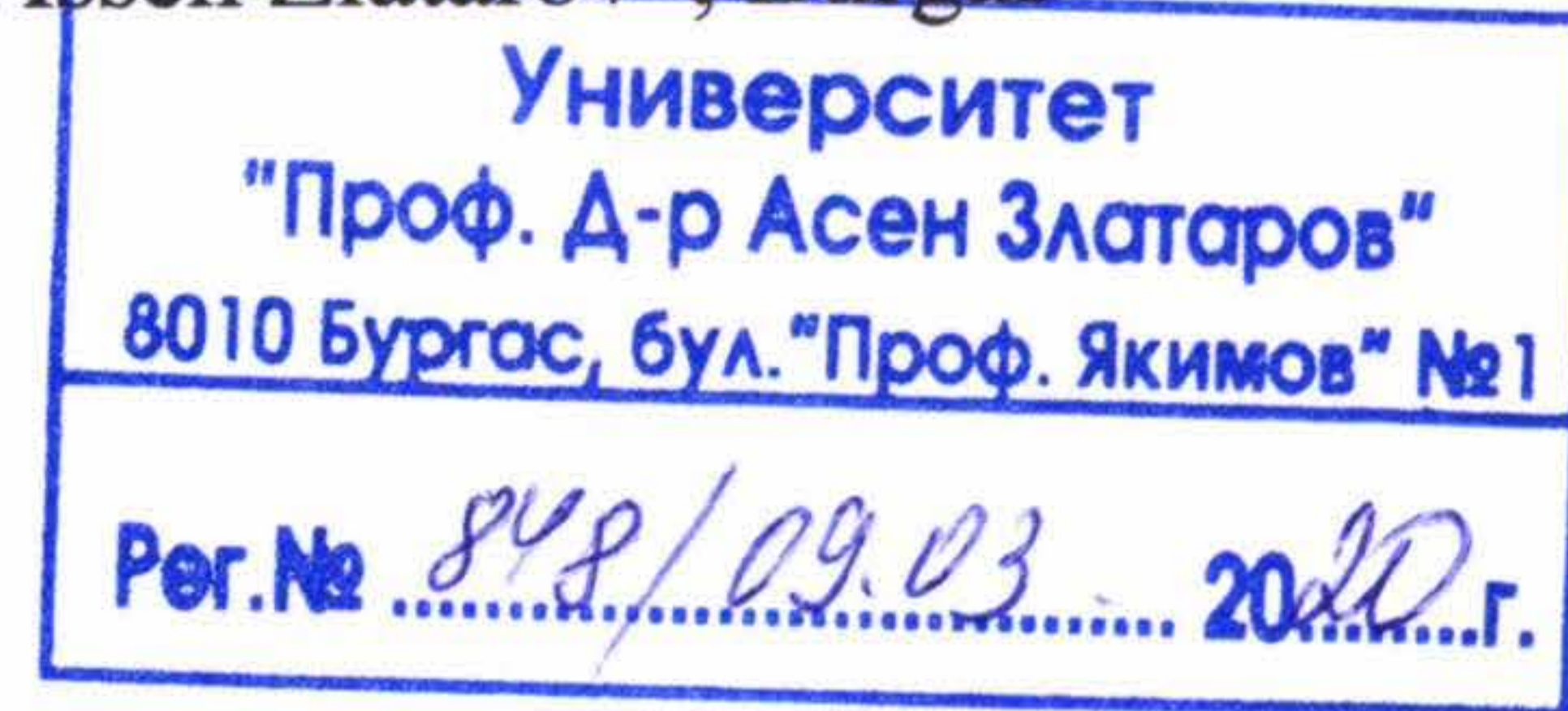


TO: The Chairman of the Scientific Jury authorized in
Decree №РД – 310/12.12.2019 by The Rector of
University “Prof. Dr. Assen Zlatarov”, Burgas



REVIEW

by prof. Dr. Ioannis Papataniou, MD, PhD
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According: a competition procedure for awarding the academic position “Professor” in the high education area 7. Public health care and sport, professional field 7.4. Public health, scientific field “Organization and management of non-material production (health management)” at the University “Prof. Dr. Assen Zlatarov”-Burgas.

In the present competition for the academic position “**professor**”, issued by the Government Newspaper in №93/26.11.2019, also in the web page of the University “Prof. Dr. Assen Zlatarov”-Burgas is allowed to participate one candidate assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva

With Decree№ РД – 310/12.12.2019 I am authorized as a member of the Scientific Jury and I was chosen to write a review on the procedure for awarding of the academic position “professor” with a participant assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva.

I. Participant’s career profile analysis

Assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva was born on 19.05.1975 in Burgas. In 1994 completes secondary education at English Language School “Geo Milev” – Burgas. She has completed two master's degrees - the first one is in the field of the industrial management in 1999 and the other one in 2000 is “technology of petroleum and chimmothology” - both of them are at the University “Prof. Dr. Assen Zlatarov”- Burgas. After a successfully defended scientific thesis on “Controlling exploring and development in the enterprise activity using as an example the petroleum industry”, she achieves in 2006 the PhD degree in the scientific field 3.7. Business administration and management, cipher 05.02.21 “Organization and management of the production (by industrial areas)”. Since 2000 she works at the University “Prof. Dr. Assen Zlatarov”-Burgas and she has passed all the academic positions from “assistant” to “assoc. professor” - in June 2010. In 2013 she has

participated in a specialized educational training at the headquarter of “The Organization for prohibition of chemical weapons”, UN, at The Hague, Holland. In 2017 she has passed an education on “Training Workshop in Russian on Best Practices for Developing the Responsible Care® Programme for the Chemical Industry” at University “D. Mendeleev”, Moscow, Russia. She has been participated in seminar educational courses in Vilnius, Lithuania and in Consortium FLAG at University Delaware sequenced with The United States Agency for International Development (USAID) on topics such as Policy Context, Program Development, Project Management, Monitoring and Evaluation, etc. Since 2015 she is a head of the department “Organization and management of public health care” at University “Prof. Dr. Assen Zlatarov”-Burgas. Assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva is with excellence written and speaking skills in English, German and Russian languages and has a high level of working with computer software skills.

II . A general description of the submitted materials for the competition

The deposited for the present competition documents by assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva are prepared very accurate, are arranged logically and are in total correspondence with the necessary requirements, declared in the internal rules for awarding of the scientific degrees and academic positions at University “Prof. Dr. Assen Zlatarov” – Burgas.

III. Complex qualitative assessment of teaching methodological and educational activity, including of PhD (doctoral) students' guidance

Assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva is a lecturer with many years of educational experience at University “Prof. Dr. Assen Zlatarov” – Burgas. It is clear from the listed information that her annual workload with educational-lecturer activity (actual lectures and consultations) significantly exceeds the required standard for a habilitated university teacher required at University “Prof. Dr. Assen Zlatarov” – Burgas. Her occupational (working) experience as a university lecturer includes lectures and seminars with students from specialty “Health management” – bachelor degree, master degree and postgraduates, with specialty “Nurse” – bachelor degree and “Paramedics – 4th level” – postgraduate course, also specialties such as “Industrial management”, “Business administration”, “Tourism”, “Marketing” – for all of them the participant is a leading educator on disciplines, such as “Economic of public health”, “Financial issues of public health care”,

“Public health care business organizations management”, “Financial issues of accounting and control”, “Effectiveness and competition of health business organizations”, “Social health insurance systems”, “Controlling process at health organizations”, “Labor payment and working time optimization of public health business organizations”, “Economy, management and financing of health organization”, etc. Assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva has participated in the development of educational programs for 19 disciplines, as for 6 of them she is the only author. In particular, she has developed the educational programs: of 9 disciplines for specialty “Health management” – bachelor degree; of 4 disciplines for specialty “Health management” – master degree (4 semesters); of 4 disciplines for specialty “Health management” – master degree (3 semesters); and of 2 disciplines for specialty “Health management” – postgraduate course. Assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva has been a science mentor and consulter for the guidance of two successfully graduated “PhD” scientists – the first one has defended PhD degree in 2014 and the second one – in 2016. During 2015-2019 assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva was an educational mentor for 19 master gradulators. The listed above evidences definitely show that assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva is a university lecturer with rich professional experience and is highly appreciated scientist by her colleagues and students.

IV. Assessment of the candidate's academic work for the total academic development

For the participation at the present competition assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva has deposited a list and materials for evidences for a total of 47 full-text scientific publications, as 19 of which are published in reviewed and indexed journals. The candidate participates with 22 (47%) publications in which is the only author and with 25 (53%) publications in which is with co-author. In non-referred issues with scientific boards or published in editorial collective volumes there are listed 19 publications. Assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva has deposited for the competition and 4 published chapters of co-authored monographies, 4 participations in issuing of university textbooks, as in two of them she is the only author. The total analysis of the published scientific research works of assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva shows large and wide variety, deep research, specificity and analyticity. In the reviewed scientific publications are considered

issues related to the prevention of the health risk of the occurrence of socially significant diseases are considered, common problems and tendencies in accordance with innovative approaches in the field of the healthy, safety and ergonomic labor conditions, the direct toxic effects of petroleum and petroleum products on the vital functions of organisms and the range of the health risk in this matter, the mathematical modelling of the thermal processes in propagating the laser beam into biological tissues, as well as experimental research work, supporting the management functions by increasing the effectiveness of the controlling and organizational-management problems in the field of the public health. Assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva has entered for the present competition evidences with materials that prove 79 citations in total.

The submitted scientific papers, as well as the citations, are not repeated with the ones submitted for the acquisition of the PhD degree and the academic position “associate professor”. The publishing activity of assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva shows lasting tendencies for chronological uniformity.

V. Assessment of “habilitation” scientific work submitted for participation in the competition for the "professor" from the candidate

In her basic “habilitation” scientific work, titled as “Organization and management of healthy and ergonomic working conditions” assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva provides a thorough overview of the organization and management of occupational health and ergonomics, analysed globally as a matter of management, medical and labour process. The successful realization of this process demands human resources, professional not only in the engineer-economic science but also in the field of the public health and the occupational medicine. The failure to observe safe and ergonomic working conditions is a prerequisite for the high risk of socially significant illnesses. As a result of organizational, management and design errors in the construction of technical facilities, situations of technical and operational decisions are observed situations of taking decisions of technical and exploitative matter with a negative influence on the health condition and the human ability for fulfilling his occupational duties. It is proven that in the contemporary globalization of the occupational working conditions and the rapid production, the human being is suffering from lack of real time. In particular, higher requirements for the accuracy and reliability of motor responses are observed, which are leading to disorder in movement coordination as well as permanent musculoskeletal disorders and frequent visual impairment. Additionally, there are

evidences for occurring of neuro-psychic tension accompanied by high levels of emotional stress and fatigue.

In her “habilitation” work assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva also discusses issues related to compliance with the standards for ergonomic design of technical systems which interact with the health statement, safety, effectiveness and productivity at contemporary occupational labour conditions.

The leading research thesis of assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva includes a complex theoretical and applied analysis and concrete solutions for continuous improvement of the processes of organization and management of health and ergonomic working conditions. The specific characteristics of health risk are linked to the healthcare system. The applicant examines in detail the overall health risk, the health risk in the work process, as well as the standards for health and safety at work. Information on health risks caused by human error is provided. The study found that improving working and living conditions leads to the prevention of adverse effects on human health and performance. Adherence to and establishment of principles of good ergonomic practices reflects on the level of public health in the country because it increases the working capacity, efficiency and safety at working conditions.

As a significant scientific and scientifically applied contribution resulting from the conducted research is the created and tested methodology for algorithmic estimation of the activity of the operator, while giving a quantitative assessment of the human activity in the "Man-machine-environment system" (MMES). Its practical use is widely explained and mostly in the cases in which it is necessary to carry out a comparative evaluation of the same types of activities and for an ergonomic evaluation of MMES. The indicators indicated in the methodology for algorithmic evaluation of operator activity reflect more the complexity of describing the algorithm of the activity than the real complexity of the human activity - the operator. At the heart of the description of human activity in MMES is an algorithmic description of the management process. It is based on the fact that the management of technological processes is carried out on the basis of processing information according to certain rules and procedures. For the continuous monitoring of even very simple and uniform indicators requires the constant involvement of an ergonomist who can compare and select the best algorithm. If a business organization is not involved in the continuous design of complex systems and such work is unique to it, then it must contact highly specialized organizations (such as outsourcing).

Another significant practical contribution, that is achieved in the „habilitation“ scientific work of assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva, is the proposed methodology for modeling the uncomfortable working position of the human operator. The described approach is suitable for predicting changes in the comfort of the operator's position when changing the parameters of the planned design for the workplace. The important thing is that, based on designing of the uncomfortable working position of the operators, it can be used to obtain estimates of private ergonomic indicators during the working places inspection (WP). It can be applied by ergonomists because they do not always have the required set of empirical data, especially in the cases, in which the brand new working places are experimentally been tested, then the essential meaning of the interaction between the human and the machine, for which it is demanded much more time. The described technique can be considered as one of the tools for building adequate models for estimating ergonomic characteristics with a limited period of time for a detailed study of the human-machine system.

The monograph proposes a methodology for analysing the motor activity of the possible labour skills (able-bodied) population in a suggested region, which is tested by investigating the level of physical activity skills of people from 18 till 65 years old, as in the survey are included 675 people. As a prevention for keeping relevantly good health condition of the occupied (working) man there can be integrated national habits policies and encouraging of the population since very young age to develop sport skills. Therefore, it is essentially important to be required national methodologies by which a cycling monitoring to be executed of the human-body activity of the able-bodied population in a given region. The motor activity, health and quality of life are closely linked and there is a narrow interaction between the physical activity, stress relief, depression and the anxiety. Therefore, the human-body activity helps to improve overall well-being, quality and longevity. The human-body activity can have a positive effect on the health and well-being of people of any age.

The contemporary practices in the human resources management pay particular attention to the organization of ergonomic and healthy working conditions, while taking into account the degree of satisfaction with the work performed. The good working conditions are important in preventing accidents and occupational diseases. They contribute both to the overall improvement of health status and to the reduction of costs at national, sectoral and company level. In general, the assessment of working conditions can contribute to the quality of business organization management.

The monography of assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva is a modern and useful tool in the hands of health and industrial managers, engineering designers and designers. It contains a combination of managerial knowledge and skills applicable to both modern ergonomic design and occupational medicine.

The second rehabilitation work written by assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva is also very interesting and relevant, titled: "Investigation of the propagation of laser radiation when passing through biotissues". The most significant scientific contribution could be the study of practically applicable models that describe the propagation and interaction of laser radiation with biological tissues through various software applications. Through them it is possible to study the influence of different laser parameters and the degree of influence on the laser wavelength and the interaction effect which will allow to reduce the thermal effect on the surrounding biological tissues and as a result to significantly reduce biological damage to structures. In the course of the research, it is proved that the treatment of different types of lasers can be modelled. The Monte Carlo model studied can serve as a guide for the preparation of a software product based on it. To this end, the characteristic features of the interaction of laser radiation with biological tissues are taken into account, namely: the complex and multilayered structure of biological tissues; the reflection of the laser beam from the surface; attenuation of the laser beam in the tissues; convective and radiating component in the process of surface cooling; dependence of optical and thermal properties on the type of tissue. The wavelength and power of the laser radiation are determined by the size of the tumor and the absorption spectrum of the pathological tissue. All types of laser thermotherapy require careful determination of the "dosimetry" of laser radiation, reliable data on the optical and thermophysical parameters of bio tissues and the use of ways to control of these parameters. Often, the therapeutic effect of laser radiation is associated with a high degree of consistency or polarization. The multiphoton excitation of biomolecules can be achieved by very short laser pulses which have low energy but high "upend" power.

A wide variety of therapeutic effects methods require the use of lasers with different radiation parameters. For this purpose, different emitting heads, which contain one or more lasers and an electronic device, that connect the control signals from the base unit to the laser are used in practice. The various optical devices allow the radiation to reach the desired target area. The block principle allows the use of a wide range of laser and LED heads, which have different spectral, space-time and energy characteristics,

which on the other hand raises the quality of treatment to a new level due to the combined use of various laser therapies. Modern methodologies make it possible to select different impact parameters (radiation mode, wavelength, power) in a wide range. Laser treatment devices must provide these parameters, their reliable control and display, and at the same time to be simplified and easy to operate.

The practically applied models are theoretically substantiated and studied in the monography, which describe the process of interaction between the laser beam and the biological tissues and allows to model the machining process with different types of lasers.

1. The results of modelling the thermal propagation of laser radiation make it possible to evaluate the thermal impact on biotissues and to choose the optimal exposure time for uniform and prolonged heating of the tissues without negative reactions. They can be used in laser thermotherapy and biostimulation and to serve as the basis for mathematically providing research for determining optical and thermophysical parameters.

2. The mathematical models are implemented in the form of original programs in the middle of Matlab and tested through simulations. This allows the biological environment to change automatically, also its electrophysical parameters, the thickness of the layers, the dimensions of the biological environment, which makes the software useful tool for testing experiments of bio tissue.

The monography is suitable for specialists in the field of medicine and physics and mathematics, which confirms the thesis that cancer should be treated by a multimodal team. The monography can be used as a starting point for people who are developing or using different software applications (programs) for numerical experiments in the analysis of the interaction between laser radiation and biological tissues. They would allow to study in more detail the influence of different laser parameters and the degree of influence of the laser beam wavelength and the effect of the impact, which would reduce the thermal impact on the environmental bio-fabric and, as a result, significantly reduce biological damage to the structures.

VI. Science improvement of candidate's publications in national and foreign literature

Reference to the implementation of the Minimum National Indicators required by groups for the various academic degrees and academic positions, according to Art. 29, para. 3 by The Act of the Development of the Academic Personnel in The Republic of Bulgaria (ADAPRB),

are evident that assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva collects 725 points with the minimum required point equivalent – 150.

VII. Project participation/ implementation and management

For the needs of this competition, assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva, has presented evidence to participate as a team member in four research projects, as follows:

1. Project № 8. Contract №ННХ-428/2019 „Analysis of Health Tourism Development Opportunities in Burgas District” (2019). NIS Contracting Authority, NIHTD Fund;
2. Project № 9. A research project at the “Organization for prohibition of chemical weapons”, at UN, 2013, place – the OPCW at Hague (Holland), University of Surrey (UK) and Jurong Island (Singapore), Title: „Nanotoxicology and regulatory issues of emerging technologies”;
3. Project № 10. “Encouraging entrepreneurship in the food industry in the BG-TR cross-border region” by Cross-border Cooperation Instrument for Pre-Accession Assistance Instrument Bulgaria-Turkey (Contract № ПД-02-29-132/29.06.2011) – TICh Project – Burgas – 2011-2012.
4. Project № 14. Project “Joint Operational Programme “BLACK SEA BASIN 2007-2013”, Contract: 2.2.1.73194.264 MIS-ETC 1459, “Creation of Interuniversity centre for risk management and assessment for prevention of ecological and technological risk in the Black Sea”.

VIII. Overall assessment of the applicant's compliance with the required mandatory conditions and mandatory quantitative criteria and scientometric indicators

The attached self-assessment report for the fulfilment of the national minimum scientometric criteria shows that assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva repeatedly exceeds the minimum requirements for occupying an academic position "Professor", required in the Rules for implementation in the ADAPRB and the Rules for implementation for The University “Prof. Dr. Assen Zlatarov”- Burgas.

Indicator group	Academic position "professor"		
	Achievement	Minimal national requirements	Minimal requirements for University "Prof. Dr. Assen Zlatarov"- Burgas
A Indicator 1	50	50	50
B Indicator 2	-	-	-
B Indicator 3	100	100	100
B Indicator 4	-	-	-
Г Sum of indicators from 5 to 9	1256.67	200	250
Д Sum of indicators from 10 to 12	725	100	150
Е Sum of indicators from 13 to the end	258.33 (E 14 = 60)	100	120 (E 14 = 60)
Total	2390	550	670

Critical notes and recommendations

I would recommend to assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva, to continue and develop her research and analysis on "Opportunities for the development of health tourism in Bulgaria". Bulgaria's position in the health tourism map and its comparative and competitive advantages to neighbouring countries, both in political, economic and planning contexts, would be extremely useful for building a coherent and adequate national health tourism strategy in the close future.

Conclusion

Assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva is an established and erudite scientist with rich as an educational lecturer and science experience and impressive of its demand and content scientific-research published work. The materials presented for the competition show that assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva repeatedly exceeds all the requirements for occupying the academic position of "Professor", included in the ADAPRB, The Rules of its Implementation, as well according to Section IV "Conditions for occupying the academic position "Professor " of the Rules on the Terms and Conditions for Acquiring Degrees and Academic Positions at The University "Prof. Dr. Assen Zlatarov"- Burgas. The assessment of the applicant's scientific production and study activity shows compliance with the scientometric criterion of high yielding character and results of high

scientific and practical value. Taking into account her professional development, as well as her scientific appearances, I give my positive vote on her choice of "professor" and I strongly recommend to the members of the distinguished scientific jury to award the academic position "Professor" to assoc. prof. engineer - economist Stoyanka Petkova Petkova-Georgieva in the in the High education area 7. Public health care and sport; Professional field 7.4. Public health; Scientific field: Organization and management of non-material production (health management) for the needs of department "Organization and management of public health care" at Faculty of social health and health care, at the University "Prof. Dr. Assen Zlatarov"- Burgas.

06.03.20

Reviewer:

prof. Dr. I