

Summary

ENHANCING ENGINEERING EDUCATION THROUGH THE UNIVERSITY-INDUSTRIAL ENTERPRISES STRATEGIC PARTNERSHIP

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In the developing economy of knowledge, the task of establishing and strengthening partnership with industry and the labor market as whole becomes of the top priority. It needs developing a network of organizations interested in mutually beneficial collaboration in the area of training highly qualified engineers, improving the technical facilities of the academic process, conducting joint research, upgrading manufacturing facilities, etc. To make such collaboration a success, it is important to realize how to establish the university-industry partnership based on mutual interests and benefits. The paper presents the experience from St.Petersburg State Electrotechnical University «LETI» in launching and running a University-Industrial Enterprises Strategic Partnership Program aimed at enhancing engineering education at the university.

CORPORATE CHAIR IN THE SYSTEM OF HIGHER VOCATIONAL EDUCATION

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In article are considered questions of the integration of industrial structures and institutions of higher education of a technical profile for the preparation of bachelors, engineers in accordance with the modern tendencies in the domestic and global education and the require-

ments of the production to the level of training of modern specialists.

MULTI-LEVEL INNOVATIVE SCIENTIFIC AND EDUCATIONAL COMPLEX: INTEGRATION OF SCIENCE, EDUCATION AND BUSINESS

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The authors consider multi-level scientific and educational complex as a good example of vocational education updating, that is based on effective cooperation of educational institutions and scientific and business organizations.

TEAMWORK OF JOINT STOCK COMPANY «TOMSKNIPINEFT» AND TOMSK POLYTECHNIC UNIVERSITY FOR MODERN PETROLEUM ENGINEER TRAINING

A.S. Latyshev, I.N. Koshovkin JSC «TomskNIPIneft»

The problems of training modern petroleum engineer are analyzed. Also authors consider effective programs of development and training for research and design institute staff.

TRAINING RESEARCH AND PRODUCTION COMPLEX ENGINEER TREATMENT SYSTEM MODEL

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Human resources formation is the process which demands engagement of all participants and concerned parties such as higher education institution, employer enterprises, elementary education institution and secondary vocational education institution. In virtue of economical and organizational principles technical universities are not capable to provide and to renew academic activity laboratory and production basis, to fit laboratories

with modern expensive (and in some cases unique) equipment. Taking into account that demands to modern engineers' competence and to their hand-on experience and skills keep growing, it is necessary to update and constantly confirm their essential qualities correspondence and to unify higher education institutions, students, graduates and employers activity into training research and production complex. In this book such complex is seen as an engineer treatment system model conforming modern demands.

ELESY CORPORATE TRAINING SYSTEM

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In the context of the transition to the two-level system of higher education, Russian IT-companies face such a complication as personnel deficiency in the sphere of engineering. To solve the problem of employee training, adaptation and further development EleSy Company has introduced the corporate training system. This system is aimed to provide an effective educational process which can be easily combined with daily job responsibilities.

AN EDUCATIONAL MODEL BASED ON MASTERS PROGRAM «MULTIMEDIA MULTIPROCESSOR SYSTEMS-ON-CHIP».

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Educational program started at Tomsk State University of Control Systems and Radioelectronics, being realized in «Elecard Group» and financed by Infrastructure and Educational Programs Fund («Rosnano» public corporation). The edu-

cational program's purpose is preparation of specialists for the development and mass production of new generation 65-90 nanometer chips for digital television receivers.

ROSNEFT OIL COMPANY AND SIBERIAN FEDERAL UNIVERSITY PARTNERSHIP

*N.N. Dovzhenko, V.I. Kolmakov
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A unique for contemporary Russia experience of integrated cooperation of a major corporation and a federal university for the purpose of personnel training for oil and gas industry is shown.

INTERACTIVE LEARNING AS A MODERN METHOD OF TRAINING OF ENGINEERS FOR OIL AND GAS INDUSTRY

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A comparative analysis of interactive systems for training of engineers at such the advanced oil and gas companies as SHELL, BP, THK BP, BOURBON, and GAZPROM is given in the article. An interactive learning in this analysis has been perceived as the kind of learning which is organized as the interaction of the trainees with the learning environment established on the basis of the real work processes.

AN INTEGRATED SYSTEM OF ENGINEERING EDUCATION IN AEROSPACE UNIVERSITY

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The basic principles of an integrated system of higher education. The methods of organization and planning of the educational process in the field of aerospace profile in the system of integrated education. Are some innovative educational technologies to improve quality of training specialists.

GRADUATION THESIS RATE IN TECHNICAL UNIVERSITY

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Graduation thesis fulfilling is the most effective method of knowledge, skills, experience and competence revelation formed during education at university and performed to State Examination Board on thesis defence. Limited time, graduate personal skills, State Examination Board members – all that influence thesis impartial assessment. Under conditions of permanent requirements severization which employers demand from technical universities graduates and growing significance of graduate rate in certification, following professional activities and career development method and procedure elaboration becomes very important. In this book you can find graduation thesis estimation procedure evaluated during specialists and bachelors certification in the areas 'Electronic means engineering and technology'.

CHALLENGES AND SOLUTIONS: MASTER'S STUDENT TRAINING FOR POST-INDUSTRIAL ECONOMY

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The paper discusses the problems and their solutions, associated with the quality enhancement of Master's program training in engineering with a view to a post-industrial economy.

FORMING OF CREATIVITY IN THE TIME OF TRAINING FOR ENGINEERS OF MASS PROFESSIONS

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Consideration of complex problem for forming of creativity in the time of training for engineers of mass professions. Foundation of creativity consist in over-

coming of «embryonism» and incompetence of graduating students in compliance with requirements of professional approach in engineering education.

ABOUT TARGET STUDENTS TRAINING IN THE DIRECTION «THE APPLIED MATHEMATICS AND COMPUTER SCIENCE» FOR OPEN SOCIETY «TATNEFT» AT KAZAN UNIVERSITY

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In given article we share our experience in interaction of the Kazan federal university with one of the largest Russian oil companies – Open Society Tatneft in IT-specialists training.

PROBLEMS OF TRANSITION OF ENGINEERING HIGH SCHOOLS ON A TWO-LEVEL EDUCATION SYSTEM

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As it is known, the educational system in the Russian Federation during the last years is exposed to reforming. The introduction of Russia into Bolonsky process obliges to pass all higher educational institutions to two-level system of preparation the bachelor-master. In given article the basic problems of transition of high schools on a new education system on an example of preparation of students in directions «Agroengineering» and «Power system» of the Mordovian state university of N.P. Ogaryov are presented.

ENGINEERING EDUCATION DEVELOPMENT IN FEDERAL UNIVERSITY

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The paper examines the questions concerning the development of multi-level engineering education system in

a federal university in terms of Kazan (Volga Region) Federal University. The proposed model of engineering education, which is based on the fundamental training and project-oriented Master's programs, is considered by the authors as a necessary condition to increase innovative capability of federal university.

THE ROLE OF LEADING CLASSICAL UNIVERSITIES IN ENGINEERING EDUCATION DEVELOPMENT

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The paper is focused on the role of leading classical universities, sponsored by the government, in the development of engineering education in Russia. The possibility of successful engineering training in a classical university is justified by fundamental and interdisciplinary nature of education provided, appropriate training facilities which have been renovated due to the state aid. The universities can establish innovative business associations in cooperation with industrial enterprises. Such business associations could provide students with internship and future work places, as well as they could contribute to the increase of new industrial capacity.

CONFERENCE ON «CHALLENGES AND FUTURE OF ENGINEERING EDUCATION»

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The development of modern engineering education - an essential component of the technological modernization of Russia. Reform of training technical personnel today - a global challenge due to the increasing complexity of socio-technical systems and related process risks.