

Summary

NATIONAL DOCTRINE DESIGN PRINCIPLES IN RUSSIAN ENGINEERING EDUCATION WITHIN NEW-TYPE INDUSTRIALIZATION: PROBLEMS, OBJECTIVES, CHALLENGES

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The authors analyze contemporary conditions of Russian engineering education and propose principles and strategies to improve Russian engineering education according to modern requirements.

SYSTEMS ENGINEERING AS AN ESSENTIAL ELEMENT OF MODERN ENGINEERING EDUCATION

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mation*

We discuss the need for education in systems engineering, the problems of organizing such education and requirements for educational programs in this area. It is shown that training in systems engineering is a key tool for shaping a new generation of engineers who are ready to create a competitive system for the global market.

DEVELOPING CREATIVITY TRAINING IN ENGINEERING EDUCATION

*V.I. Livshitz
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The article considers a complex problem of creativity training in engineering education. Creativity of engineers is based on the overcoming of "immaturity"

and incompetence of graduates in accordance with the requirements of competence approach in engineering education.

CREATIVITY TRAINING IN ENGINEERING EDUCATION

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There are analyzed proposals suggested in V. I. Livshits's paper on the problem of creativity formation in the course of training the engineer. It is specified that it is necessary rather to optimally combine fundamental and professional training than to substitute fundamentalization of engineering education for professionalization.

REVIEW OF ACCREDITATION OF ENGINEERING EDUCATIONAL PROGRAMS IN LITHUANIA

*S.O. Shaposhnikov
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The paper presents review of the specific features of legislation documents and further implementation of external independent assessment of engineering educational programs in Lithuania.

THE ISSUE OF TRAINING AND QUALIFICATION OF RUSSIAN ENGINEERS

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Only professional engineers can provide modernization of the national economy. These engineers should possess not only high professional skills but also the initiative, creative approach to decision making and high responsibility for the results of their engineering activity. In order to train such graduates the university programmes have not only to meet the requirements of the Federal State Educational Standards but also increase

it significantly in the field of orientated development of the graduates' competences under conditions of systematic interaction with employers to implement training competence model for future engineers. The socio-professional accreditation of such an educational programme, which is carried out in accordance with worldwide criteria, gives a graduate an opportunity to be licensed as a Professional Engineer at National or European Engineer Certification Centers.

EDUCATION QUALITY ASSESSMENT IN HIGHER EDUCATION INSTITUTION

A.K. Tomilin

East Kazakhstan State Technical University named after D. Serikbayev

The article describes a conceptual model of the education quality assessment based on the principles of the international standards ISO. This systematic approach involves the professional formation of every instructor and evaluates his/her qualification. The experience of East Kazakhstan State Technical University named after D. Serikbayev is described.

EVALUATION OF EMPLOYABILITY (TECHNICAL UNIVERSITY GRADUATE EMPLOYMENT RATE)

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Higher institution efficiency is determined by employability and education quality of the institution itself, whereas efficiency criteria are based on the compliance of graduate competences to employers' requirements, as well as their labour market competitiveness. Development strategy of this or that institution, as well as its policy, target and objectives in education, research and innovation significantly depends on future graduate employability and his or her professional competitiveness. This fact highlights the definition of graduate employability as

education quality assessment criterion and as an indicator of labour market demand. Besides, graduate employability is also an indicator of employer satisfaction and continuous improvement of graduate competences which, in its turn witnesses the attractiveness of this or that institution.

STATISTICAL QUALITY EVALUATION APPROACH OF EDUCATION PROGRAMS

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This article is devoted to the development of quality assessment techniques for educational programs involving the individual results of graduate learning outcomes. This statistical approach characterizing the quality of educational programs and denoting learning results as a system introduces not only an entropic indicator as quality indicator of educational program as a whole, but also as a level indicator of discrepancy in the system itself. The statistical approach was examined. The sources of the internal and external validity are shown.

INNOVATIVE DEVELOPMENT STRATEGY MANAGEMENT SYSTEM IN TECHNICAL UNIVERSITY

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Innovative development strategy management system in technical university is the contemporary issue determined by the state policy in education and at the same time is one of the priorities in providing innovations in undergraduate education, development and implementation of integrated and innovative programs solving human resource and research problems in innovative economy development based on education, research and production activities. No matter

what type of university the successful implementation of innovative development strategy management system in technical university is determined by the efficiency of the innovative development strategy management system itself the model of which is described in the present paper.

TECHNOLOGY TRANSFER. COMPARATIVE ANALYSIS OF RUSSIAN, AMERICAN AND BRITISH UNIVERSITIES

*E.O. Akchelov, S.L. Eremina
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The article analyzes the technology transfer within Russian, American and British Universities showing the statistic significance in order to accept or reject hypothesis about opportunity to use USA and UK experience in Russian universities.

QUESTIONNAIRE AS A PROSPECTIVE INSTRUMENT OF STUDENT INVOLVEMENT IN RESEARCH ACTIVITIES

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The article discusses the influence of student research activities on higher professional education development. The perspective implementation of questionnaire as instrument of student involvement in research activities is presented.

INTERNATIONAL COLLABORATION IN PROFESSIONAL EDUCATION

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The article describes the theoretical and practical issues in international collaboration to improve graduate competitiveness of Russian higher professional education institutions based on the implementation adapted foreign experience.

CONTEMPORARY CONDITIONS IN ENGINEERING EDUCATION. OVERVIEW

*E.A. Arkhangelskaya, S.G. Antsupova
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The article examines the problems in regional higher engineering education system and their solutions.

ENGINEERING TRAINING FOR KNOWLEDGE-BASED AND HIGH-TECH INDUSTRIES

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The engineers training issues for high-tech and knowledge-based industries are considered in the article. The authors propose a specialist competency model, design pattern for professional standards, graduate competence model, compliance criteria of graduate competences to professional standard requirements.

