

## Course description

### Tempus project EcoBRU

Course name
Implementation of regulations on nature protection and fulfillment of standard requirements at instrument and device-making

The name of the course section (if applicable)

Expected lecturer qualifications
College teachers, training specialists in the sphere of device-making

Lecturer	Educational institution
<b>Course Director:</b> associate professor Irina I. Bochkareva <b>Other team members:</b> associate professor Lyudmila Y. Anopchenko	Federal State Budget Educational Institution of Higher Education "Siberian State University of Geosystems and Technologies"

Deficit definition
The course improves teacher awareness and knowledge aimed at the improvement of ecological situation in the territory of enterprises involved in device-making activity

Required space in the training	Course level	Course type
Obtaining professional competences	basic	distant

Target group	Duration	Languages
College teachers	15 hours	Russian

Conditions
<b>Conditions:</b> <b>Other requirements (if applicable)</b>

Ladder Points (1 un.=30 h)	Total hours	Class work	Independent work (h)
0.5	15		15

Topicality for EcoBRU**
General environmental education: Need to specify the modern program of ecological education demonstrated on the example of device-making enterprises, their technological processes effecting the environment adversely.  Special vocational scientific education: To promote understanding of a multi-competence of the concept of ecological safety and importance of following the requirements of the nature protection legislation during the professional activity of

a certain employee of the device-making enterprise, enterprise and the whole branch of the industrial activities in general.

The specific link with the professional activity: Application of available nature protection technologies on the example of economic activity of a device-making enterprise located within the large settlement.

### Course objectives

(Knowledge) to concretize the knowledge of organizational and technological actions for greening of device-making on the example of Novosibirsk enterprises.

(Application) to reveal ecological and related social, economic and other consequences of activity of the enterprise, unacceptable for the society.

(Analysis) to define degree of danger and character of key types of impact of industrial activity of the enterprise on environment and health of the population;

(Development) to develop optimal actions for prevention or mitigation of impact of the enterprise on environmental objects;

	Educational objectives of the course (see list of verbs used for educational objectives formulating)	Methods and forms of educational process organization	Monitoring forms and evaluation
<b>Special knowledge</b>	To differentiate environmental problems of device-making from problems of other types of industries	Self-study of theoretical material	Over-all ranking (testing)
<b>Methodological and didactic competence</b>	To apply various methods and forms of training providing a deeper understanding of issues and problems of current interest in the sphere of industrial ecology	Testing	Over-all ranking (control points)
<b>Interdisciplinary competence, social competence</b>	To develop an integrated approach to the solution of environmental protection at a device-making enterprise	Internet-conference on developed concepts	Over-all ranking (results of the presentation)

Themes / Content	Class work	Hours and tasks for independent work
Ecological, sanitary and hygienic analysis of functional use of territories, balance of territories being under the influence of an enterprise. Environmental protection.		To analyse maps of the territory, to reveal a ratio of the built-up, opened and planted territories, percentage of recreational, security and restriction zones. (2 hours)
Need to obey the requirements of the nature protection legislation as the indispensable condition of an enterprise activity.		To study articles of basic laws in the field of environmental protection with help of Internet resources (2 hours)



Examination of an enterprise as a pollution source. Parameters characterizing the extent of negative influence, caused by the enterprise, on environment.		To carry out inventory of sources of negative impact of the enterprise on the environment (2 hours)
Development of an efficient system of ecological safety for the instrument and device-making enterprise.		To offer one's own concept on the improvement of an ecological situation in the territory occupied by the enterprise (7 hours)
Industrial control – an important element of the enterprise activity, concerning		To define types and forms of production control at the enterprise (2 hours)

#### Forms of control and assessment

Control form	Percentage ratio	Dates	Criteria of assessment
Over-all ranking	80		
Course work (project)	20		

#### Terms and conditions of access to monitoring and assessment of knowledge (exam)

Carrying out of control tasks and course work (project)

#### Document type certifying the successful course visiting (Certificate?)

Certificate

#### Organizational guidelines

**Place:** Siberian State University of Geosystems and Technologies, work place of the teacher

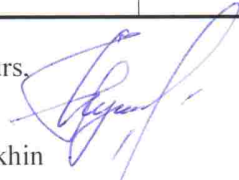
**The recommended number of participants:** 10-15

#### Literature and educational materials

Author	Year of publishing	Title	Pages number	Place of publication, publisher or an online link
<b>Basic literature</b>				
V.M. Malakhov, A.G. Gritsenko, S.V. Drizhinin	2012	Engineering Ecology: monograph, 3 volumes	813	Novosibirsk: SSGA
<b>Additional resources</b>				
V. Khomich	2002	Ecology of an urban area: Studies. Manual for higher education institutions	267	Omsk: SibADI

A.G. Vetoskin, K.R. Tarantseva	2004	Technologies of Environmental Protection	249	Penza
D. Afanasyev	2008	Collection of Instructions on the Treatment of Dangerous Wastes		Internet resource <a href="http://eco-profi.info/">http://eco-profi.info/</a>
A.A. Aulanbergerov, O.Z. Zubairov, S.B. Aydarova, E.I. Kuldeev, A.T. Tleukulov, F.R. Zhandauletova, K.T. Ospanov	2012	Quality improvement of natural waters, cleaning of waste waters (TEMPUS)	188	Almaty

Sincerely yours,



Igor A. Musikhin

Vice Rector for International Affairs

