Preliminary

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BOVA Master Course

Cross-disciplinary studies of forest adaptation to climatic change

13th -17th March, 2017

Course venue: Latvia University of Agriculture, Jelgava, Latvia

4.5 ECTS

Course description: Availability and quality of products and services we obtain from forests can be notably affected by changes of environmental conditions. Our approach in the course will be to provide examples on the potential consequences (impact) of climatic changes and possibilities to improve the vitality and/or growth of trees (stands) including such aspects as: species and within-species (seed source) selection and management regime. Information on broad spectrum of potential damages (like storm, fire, frost, drought, insects, fungi), predicted changes in their frequency and/or severity. Short and long-term consequences based on empirical datasets will be covered to ensure that participants have an overview on the forest adaptation in Baltic states.

Aim of the course is to raise awareness among students about diverse impacts of climatic changes, importance and limitation of local level prediction models, criteria for selection of the best-suited genotypes and management strategies to gain from the improvements of the growing conditions and minimize the risks related to climatic changes. Aspects of monitoring tree adaptation to environmental changes to be covered:

- major natural disturbances/risks in hemiboreal forests and their assessment;
- factors influencing intra and inter-annual variation of tree increment;
- tree genetics (breeding) and its potential to improve traits important for adaptation (tree-scale);
- measures to mitigate climate change impact on forestry – stand and landscape scale.

Content: Course will have a distance learning part, where students will be provided with a literature covering the subject and specific cases.

The cases will be discussed (in groups among students and in summarizing discussion with teachers) during the face-to-face meeting phase.

In field students will have also short practical tasks.

Additionally, short questioners will, be used at the end of every day to assess the progress of the students and shape the lectures in a way to ensure the desired outcome of the course.

Target audience: Maximum 15 master or PhD students with general background in the fields of forestry, biology and/or arboriculture. Good English skills are required.

For refunding of travelling expenses (to and from Latvia) and accommodation please contact your home institution.

Teaching team includes lecturers from Estonian University of Life Sciences, Aleksandras Stulginskis University, Latvia University of Agriculture and Latvian State Forest Research Institute “Silava”

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Preliminary information on face-to-face meeting part of the course

History and predictions of insect damages

Forest fire – causes, changes, impact, prediction (including site visit)

Plus-trees selection, seed orchards and vegetative propagation in context of climatic changes (site visit)

Storms: predictions, impact and possibilities of adaptation

Tree diseases in context of climate change (including site visit)

Genetic gain from tree breeding and genetic aspects of adaptation; resistance breeding (including site visit)

Phenology and its importance in context to climatic changes, provenance differences; frost hardiness

Role of molecular genetics in understanding the adaptation: case studies

Genetics and silviculture – interaction to enhance adaptation (site visit)