

Course name: Natural disturbances in forest communities

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| ECTS | 1 |
| Course status | optional, facultativ |
| Course final assessment /evaluation of outcomes | graded credit |
| Prerequisite | Course in basic ecology |

Main field of study: Forestry

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| Educational profile | General academic |
| Code of studies and education level | MSc |
| Semester of studies | summer |
| Language of instruction | English |

Course offered by:

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| Name of faculty offering the course | Faculty of Forestry |
| Name of department offering the course | Department of Forest Biodiversity |
| Course coordinator | Pofessor Jerzy Szwagrzyk |

Learning outcomes:

| Symbol of outcome | Description of the learning outcome | Reference to main field of study outcomes | Area symbol* |
|---|---|---|--------------|
| KNOWLEDGE – student knows and understands | | | |
| LES_NZZL_W01 | the basic terminology used in disturbance ecology. | LES2_W03 | RL |
| LES_NZZL_W02 | the role of natural disturbances in the dynamics of forest communities | LES2_W03 | RL |
| LES_NZZL_W03 | the role of natural disturbances in maintaining the biodiversity of forest ecosystems | LES2_W03 | RL |
| SKILLS – student is able to | | | |
| LES_NZZL_U01 | identify the mechanisms of natural disturbances | LES2_U01 | RL |
| LES_NZZL_U02 | describe the processes of regeneration of forest communities following natural disturbances | LES2_U12 | RL |
| SOCIAL COMPETENCIES – student is ready to: | | | |
| LES_NZZL_K01 | continue the learning process over time and to implement the new knowledge in practice | LES2_K01 | RL |
| | | | RL |

Teaching contents

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|---|---|--|
| Lectures | 15 hours | |
| Topics | Introduction to the disturbance ecology Role of wind disturbances in forest communities Wildfires in forest ecosystems Floods, landslides and avalanches in forests Insect outbreaks and large-scale infestations by fungal pathogens as natural disturbances in forest communities Regeneration of forest communities following disturbances Interactions among various disturbances. Natural disturbances and global climate change | |
| Accomplished learning outcomes | LES_NZZL_W01; LES_NZZL_W02; LES_NZZL_W03; LES_NZZL_U01; LES_NZZL_U01; LES_NZZL_K01 | |
| Means of verification, rules and criteria of assessment | Evaluation of the written report based upon the literature studies | |
| Classes:0hours | | |
| Topics | | |
| Accomplished learning outcomes | | |
| Means of verification, rules and criteria of assessment | | |

References:

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| Basic | 1. Pickett S. T. A., White P. A. (Red.) 1985. The Ecology of Natural Disturbance and Patch |
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| | <p>Dynamics. Academic Press, San Diego - New York - Berkeley.</p> <p>2. Frelich L. E. 2002. Forest Dynamics and Disturbance Regimes. Cambridge University Press, Cambridge.</p> <p>3. Johnson E. A., Miyanishi K. (Ed.) 2007. Plant Disturbance Ecology. Academic Press, San Diego.</p> |
| Supplementary | <p>1. Turner M. G., Dale V. H., Everham E. H. III 1997. Fires, hurricanes and volcanoes: Comparing large disturbances. BioScience, 47, 11: 758-768.</p> <p>2. Franklin J. F., Spies T. A., Van Pelt R., Carey A. B., Thornburgh D. A., Berg D. R., Lindenmayer D.B., Harmon M. E., Keeton W. S., Shaw D. C., Bible K., Chen J. 2002. Disturbances and structural development of natural forest ecosystems with silvicultural implications, using Douglas fir as an example. Forest Ecology and Management 155: 399-423.</p> |

Structure of learning outcomes

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| Area of academic study: R – Agricultural sciences, L -Forestry | 1 | ECTS ** |
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Structure of student activity

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|------------------------------|----|------|-----|--------|
| Contact hours | 20 | hrs. | 0.6 | ECTS** |
| Including: | | | | |
| lectures | 15 | hrs. | | |
| classes and seminars | 0 | hrs. | | |
| consultations | 5 | hrs. | | |
| participation in research | 0 | hrs. | | |
| obligatory traineeships | 0 | hrs. | | |
| participation in examination | 0 | hrs. | | |
| e-learning | 0 | hrs. | 0 | ECTS** |
| student own work | 10 | hrs. | 0.4 | ECTS** |

*Areas of academic study in the fields of: H- humanities; S - social studies; P – biological sciences; T – technological sciences; M- medical, sport and health sciences; R – Agricultural, forestry and veterinary sciences; A – the arts

** stated with an accuracy to 0.1 ECTS, where 1 ECTS = 25 - 30 hours of classes