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| <b>Course title</b>        | <b><i>Current issues in biology</i></b> |
| <b>Course code</b>         | <b><i>Biol6005</i></b>                  |
| <b>Credit points</b>       | 6                                       |
| <b>ECTS creditpoints</b>   | 9                                       |
| <b>Total Contact Hours</b> |   |

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| <b>Course developer (s)</b>                   |
| Artūrs Škute<br>Natalja Škute<br>Inese Kokina |

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| <b>Prerequisite knowledge</b>  |
| Biol1007, General ecology<br>Biol1031, Zoology<br>Biol3002, Fundamentals of evolution<br>Biol3006, Genetics<br>Biol3009, Fundamentals of biotechnology |

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| <b>Course abstract:</b><br>In today's paradigm for the origin of life and the formation of molecules in space and polymerization of the Earth. Bio-based polymer physical and chemical properties, use different molekūlrbioloģiskās studies. Mitochondrial DNA studies and theories of human origins. Ribosomal RNA research - molecular evolution and the origin of species. Genetic Engineering Fundamentals. Creation of transgenic organisms. Molecular diagnosis of the diseases. Plant and animal cloning. Regulation of cell division. Programmed cell death. Oncogenesis and the molecular mechanisms. Organism aging and the molecular mechanisms of the modern point of view. Current Systematics and taxonomy problems. Molecular Systematics. Biological resources for sustainable use of theoretical models and practical examples. Population dynamics studies. Biodiversity informative and energetic models. Biocoenoses stability and evolution - theory and practice. Topical environmental issues. Ecogenotoxicology. |
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| <b>Learning outcomes</b>   |
| Has developed idea of the origins of life. Acquired theoretical foundations of genetic engineering. Improved knowledge of sustainable use of biological resources. |

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| <b>Compulsory reading:</b> |
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1. Goodman H.D., Emmel Th.C., Graham L.E., Slowiczek F.M., Shechter Y. 1986. Biology. Annotated Teacher's Edition. Harcourt Brace Javanovich Publishers, Orlando, New York, Chicago, San Diego, Atlanta, Dallas: 1-878.  
2. Raven P.H., Johnson G.B. 1986. Biology. Times Mirror/Mosby College Publishing. St. Louis, Toronto, Santa Clara: 1-1198. 3. Wessells N.K., Hopson J.L. 1988. Biology. Random House inc., New York: 1-1252.

***Further reading:***

D.R. Alexander, R.L. Numbers, 2010, Biology and Ideology from Descartes to Dawkins. University Of Chicago Press 1-448. P.R. Ehrlich, 2002, Human Natures: Genes, Cultures, and the Human Prospect. Penguin (Non-Classics) 1-544

***Periodicals and other sources***

Periodika:

Acta Biologica Universitatis Daugavpilsensis;

Oikos;

DU abonētās datu bāzes:

Cambridge Journals Online;

EBSCO;

Science Direct; Springer Link