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|--|--|-------------|--------------------------|------------------------------|------------------------------|-----------------|------------|
| <b>Title</b>   | <b>GENOME AND ENVIRONMENT</b>  |             |                          |                              |                              |                 |            |
| <b>Code</b>  | ZDIB26   |             |                          |                              |                              |                 |            |
| <b>Study Program</b>   | Postgraduate Interdisciplinary University Programme Environment protection and Nature Conservation   |             |                          |                              |                              |                 |            |
| <b>Semester</b>  | III.   |             |                          |                              |                              |                 |            |
| <b>ECTS</b>  | 5  |             |                          |                              |                              |                 |            |
| <b>Status</b>  | elective   |             |                          |                              |                              |                 |            |
| <b>Lecturer</b>  | full professor Miroslav Plohl, PhD   |             |                          |                              |                              |                 |            |
| <b>Co-Lecturers</b>  | full professor Đurđica Ugarković, PhD  |             |                          |                              |                              |                 |            |
| <b>Requirements for Enrolment</b>  |  |             |                          |                              |                              |                 |            |
| <b>Objectives</b>  | Introduce students to genome organization and dynamics, processes and interactions that shape genome; to methods of genome analysis and their application in population and conservation studies.  |             |                          |                              |                              |                 |            |
| <b>Learning Outcomes</b>   | Acquirement of fundamental theoretical knowledge on genome organization and dynamics, introduction to molecular methods of genetic variability analysis and possibilities for their application.   |             |                          |                              |                              |                 |            |
| <b>Connection between Learning Outcomes, Curricular and Student Activities</b> | <b>Student Activities</b>  | <b>ECTS</b> | <b>Learning Outcomes</b> | <b>Curricular Activities</b> | <b>Methods of Assessment</b> | <b>Credits*</b> |            |
|  |  |             |                          |                              |                              | <b>min</b>      | <b>max</b> |
|  | Lectures attendance  | 1           |                          | lecturing                    |                              |                 |            |
|  | Seminar preparation  | 1           |                          | consultation                 | Seminar assesment            | 1               | 5          |
|  | exams  | 3           |                          |                              | Oral examination             | 1               | 5          |
|  | <b>Total</b>   | <b>5</b>    |                          |                              |                              | <b>2</b>        | <b>10</b>  |
| <b>Consultations</b>   |  |             |                          |                              |                              |                 |            |
| <b>Learning Activities</b>   | <b>Lectures</b>  |             | <b>Seminars</b>          |                              | <b>Practice</b>              |                 |            |
| <b>Hours</b>   | 10   |             | 5                        |                              | -                            |                 |            |
| <b>Contents / Teaching Units</b>   | <ol style="list-style-type: none"> <li>1. Fundaments of genome structure and organization and genome sequence dynamics</li> <li>2. Processes and interactions that shape genome</li> <li>3. Alterations in genome size, structure and organization</li> <li>4. Genome variability and adaptive evolution</li> <li>5. Molecular approach to analysis of genetic variability</li> <li>6. Genetic and phylogenetic analysis of endangered species</li> <li>7. Application of molecular techniques in population problems.</li> </ol>                                  |             |                          |                              |                              |                 |            |
| <b>Obligatory Literature</b>   | <ol style="list-style-type: none"> <li>1. E. GUICHOUX et al. Current trends in microsatellite genotyping. Molecular Ecology Resources (2011) 11, 591–611</li> <li>2. DAVID P. L. TOEWS and ALAN BRELSFORD. The biogeography of mitochondrial and nuclear discordance in animals. Molecular Ecology (2012) 21, 3907–3930.</li> <li>3. Geoffrey K Chambers et al. DNA fingerprinting in zoology: past, present, future. Investigative Genetics 2014, 5:3</li> <li>4. Stearns, SC, Hoekstra, RF, 2000: Evolution: An Introduction, Oxford University Press</li> </ol> |             |                          |                              |                              |                 |            |

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| <b>Recommended literature</b>              | -                |
| <b>Requirements for Aquiring Signature</b> |                  |
| <b>Type of Exam</b>                        | Seminar, project |
| <b>Lectures Language</b>                   | croatian         |
| <b>Quality Monitoring</b>                  | Students survey  |