

Course Unit Descriptor

Study Programme: PhD- Biology
Course Unit Title: Reproductive Toxicology
Course Unit Code: DNB032
Name of Lecturer(s): Assistant Professor Nebojsa Andric, Senior Scientific Associates Kristina Pogrmic-Majkic
Type and Level of Studies: PhD
Course Status (compulsory/elective): Elective
Semester (winter/summer): Winter
Language of instruction: English
Mode of course unit delivery (face-to-face/distance learning): Face-to-face
Number of ECTS Allocated: 15
Prerequisites: None
<p>Course Aims:</p> <p>The course provides knowledge about the impact of chemicals from the environment (with emphasis on the chemicals with endocrine disrupting potential) on the reproductive function.</p>
<p>Learning Outcomes:</p> <p>After completion of the course, it is expected that students (i) explain the mechanism and the effect of the environmental chemicals on the reproductive systems and fertility (ii) conduct research in the field of reproductive toxicology.</p>
<p>Syllabus:</p> <p><i>Theory</i></p> <p>Environmental chemicals as endocrine disruptors. Molecular mechanism of endocrine disruption. Fetal and neonatal exposure to endocrine disruptors and implications on adult reproductive function: ovarian and testicular dysgenesis syndrome. Adult exposure and impacts on reproductive health and fertility. Environmental chemicals and related systems that have implication for reproduction: neuroendocrine and immune systems. Toxicological testing: <i>in vitro</i> and <i>in vivo</i> tests and chemical risk assessments</p> <p><i>Practice</i></p> <p>Experimental models: primary culture of immature and preovulatory granulosa cells; analysis of signaling pathways and functions of granulosa cells after chemicals exposure in different experimental conditions; analysis of the results and preparation of manuscripts</p>
<p>Required Reading:</p> <p>Schug, T. T., Janesick, A., Blumberg, B. and Heindel, J. J. (2011) 'Endocrine disrupting chemicals and disease susceptibility', <i>The Journal of steroid biochemistry and molecular biology</i> 127(3-5): 204-15.</p> <p>Mark-Kappeler, C. J., Hoyer, P. B. and Devine, P. J. (2011) 'Xenobiotic Effects on Ovarian Preantral Follicles', <i>Biology of reproduction</i>.</p> <p>Blumberg, B., Iguchi, T. and Odermatt, A. (2011) 'Endocrine disrupting chemicals', <i>The Journal of steroid biochemistry and molecular biology</i> 127(1-2): 1-3.</p> <p>Craig, Z.R., Wang, W. and Flaws, J.A. (2011) Endocrine-disrupting chemicals in ovarian function: effect on steroidogenesis, metabolism and nuclear receptor signaling. <i>Reproduction</i> 142(5): 633-646</p> <p>Woodruff, T.J., Janssen, S.J. Guillette Jr, L.J. Giudice, L.C. (2010) <i>Environmental Impacts on Reproductive Health and Fertility</i>, Cambridge University Press.</p>

Weekly Contact Hours:	Lectures:	Practical work:	
Teaching Methods:			
Lectures, experimental work, analysis and presentation of experimental results, presentation of the articles from the filed of the reproductive toxicology (journal club)			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class participation		written exam	
Practical work	30	oral exam	60
Preliminary exam(s)		
Seminar(s)	10		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			