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| **Anotace předmětu:** |
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| The aim of the course is for students to learn to actively convey their knowledge in the field of water resource protection and to prepare a training course for the general public, in order to address the public in an interesting way and arouse their interest in the issue of water protection. |
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| **Prerekvizity:** |
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| knowledge of water protection issues |
| **Další doporučené předměty:** |
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| none |
| **Cíl předmětu:** |
| The aim of the course is to create a student competition in which students or student teams will prepare a teaching course on the issue of water protection. The best 3 proposals will be invited to the Czech-German competition and will implement their courses. |
| **Znalosti:** |
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| The student knows the need to protect water resources and the basic concepts associated with water management issues (eutrophication, acidification, water pollution, urban flow syndrome, hydrobiology), and is able to convey his/her knowledge to the general public. |
| **Dovednosti:** |
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| The student has skills related to the protection of water resources - water quality; eutrophication, acidification, floods and water shortages; drinking water treatment and wastewater treatment. The student understands the role of water in the circular economy, has basic knowledge about the protection of water resources and their management. The student is able to convey his/her knowledge to the lay public. |
| **Kompetence - komunikace:** |
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| The student is able to work both under supervision and in a team. He/she can formulate and present his/her own opinions, clearly communicate information and ideas, specify problems and propose solutions. |
| **Kompetence - úsudek:** |
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| The student is able to approach work creatively and proactively, uses relevant data (literature, own experience, experience of experts) when forming a judgment. Has management skills within the framework of defined rules. |
| **Kompetence - vzdělávání:** |
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| The student is capable of further independent education, expanding knowledge, monitoring sources of professional information. He/she is able to obtain information to assess the situation in the environment, is able to critically evaluate his/her own knowledge and determine his/her own information needs, and is able to direct others in finding educational needs. |
| **Způsob a metody výuky:** |
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| Teaching takes place in the form of consultations, independent work by students, and subsequent presentation of the created educational materials. |
| **Zakončení předmětu:** |
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| The course is concluded in the form of a credit, which students will receive after submitting and evaluation of the design of their teaching materials and courses. The submitted materials will be evaluated based on their topicality (relevance of the chosen problem), accuracy (quality of presentation and information conveyed), originality (method of presentation and ability to engage the public) |
| **Literatura:** |
| |  | | --- | | **Základní:** | | |  | | --- | | Stumm, W., Morgan, J.J. (1996). Aquatic chemistry chemical equilibria and rates in natural waters. Wiley, 1022p | | Mason, C. (2002). Biology of freshwater pollution. Pearson Education Limited. Essex. 376p, | | Laws, E.A. (2000). Aquatic pollution. An Introductory text. John Wiley and sons, New York, 632p. | | Butler, D., Davies, J (2011). Urban Drainage (third edition), Taylor and Francis, London | | Joanne E. Drinan and Frank Spellman (2012). Water and Wastewater Treatment A Guide for the Nonengineering Professional, Second Edition | | D. G. Rao, R. Senthilkumar, J. Anthony Byrne and S. Feroz (2012). Wastewater Treatment Advanced Processes and Technologies. IWA Publishing, CRC Press | | Kerry J. Howe,David W. Hand,John C. Crittenden,R. Rhodes Trussell,George Tchobanoglous. (2012) Principles of Water Treatment. MWH. John Wiley & Sons | | Chartres, C. (2010). Solving the World's Water Problems. Velká Británie: Pearson Education.  Newton, D. E. (2016). The Global Water Crisis: A Reference Handbook. Spojené státy americké: Bloomsbury Publishing. | | Lofrano, Giusy (Ed.) Green Technologies for Wastewater Treatment. Energy Recovery and Emerging Compounds Removal. Series SpringerBriefs in Molecular Science Subseries SpringerBriefs in Green Chemistry for Sustainability | | |  | | **Doporučená:** | | |  | | --- | | Henze, M., Harremoes, P., Arvin, E., Jansen, J.C. (2002). Waste water Treatment Biological and Chemical Processes. Sprionger - Verlag, Berlin, 433p., | | Lens,P., Zeeman, G. ,2001 Decentralised Sanitation and Reuse. Concepts, Systems and Implementation. Taylor & Francis Group. 8) Rumana Riffat (2013).Fundamentals of Wastewater Treatment and Engineering. IWA Publishing | | A. M. Makarieva and V. G. Gorshkov (2007). Biotic pump of atmospheric moisture as driver of the hydrological cycle on land. Hydrol. Earth Syst. Sci., 11, 1013–1033 | | Makarieva A.M., Gorshkov V.G., Sheil D., Nobre A.D., Li B.-L. (2010) Where do winds come from? A new theory on how water vapor condensation influences atmospheric pressure and dynamics. Atmospheric Chemistry and Physics Discussions, 10, 24015- 24052. | | Meyer JL, Paul MJ, Taulbee WK (2005) Stream ecosystem function in urbanizing landscape. Journal of North American Benthological Society 24: 602-612 | | Walsh CJ, Fletcher TD, Ladson AR (2005a) Stream restoration in urban catchment through redesigning stormwater systems: looping to the catchment to save the stream. Journal of North American Benthological Society 24:690-705 | | Walsh CJ, Roy AH, Feminella JW, Cottingham PD, Groffman PM, Morgan II RP (2005b) The urban stream syndrome: current knowledge and the search for a cure. Journal of North American Benthological Society 24:706-723. | | Walsh CJ (2000) Urban impacts on the ecology of receiving waters: a framework for assessment, conservation and restoration. Hydrobiologia 431:107-114 | | |
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