# COURSE TOPICS

## Full-time student (full-time and correspondence)

<table>
<tr><td>Course name:<br>The role and place of modern technologies in the system of nature conservation and wildlife management</td><td>Subject Neptune code:<br>Full-time: MEAJKOISVL01Ő<br>MEAJKOISVL01T<br>Correspondence:<br>Diploma Correspondence:<br>Subject responsible institute:<br>Institute of State Sciences</td></tr>
<tr><td></td><td>Subject:<br>compulsory</td></tr>
<tr><td colspan="2">Course coordinator:<br>Full-time: Dr. Balázs Szabó PhD. Associate Professor<br>Correspondence/Diploma Correspondence: Dr. Balázs Szabó PhD. Associate Professor</td></tr>
<tr><td colspan="2">Contributing lecturer(s): Dr. Balázs Szabó PhD. Associate Professor</td></tr>
<tr><td>Recommended semester: Spring/Autumn</td><td>Prerequisite: -</td></tr>
<tr><td>Number of hours/week:<br>Full-time: 2 hours/week<br>Correspondence/Diploma Correspondence: 9 hours/semester</td><td>Method of accountability:<br>Reporting</td></tr>
<tr><td>Credits:<br>Full-time/Correspondence: 3 credits<br>Diploma Correspondence: 3 credits</td><td>Work schedule:<br>daily and correspondence</td></tr>
<tr><td colspan="2">Course objectives and goals:<br>The course aims to provide students from any faculty of the University of Miskolc with a comprehensive, interdisciplinary picture of the 21st century technological revolution (digitalization, drone technology, artificial intelligence, GIS) and „green” administration, especially the relationship between nature conservation and wildlife management. The course highlights how modern technical tools support sustainability, wildlife protection, administrative processes, and the management of human-wildlife conflicts.<br><br>Competencies to be developed:<br>knowledge:<br>- Knows the basic concepts of public administration technology and the main legal and technical frameworks of green administration.<br>- Understands the applicability of drones, mobile applications and IT tools in the monitoring of wildlife and the maintenance of protected areas.<br>ability:<br>- Is able to evaluate technological responses to environmental problems with a multidisciplinary approach.<br>- Recognizes the benefits and legal/ethical limitations of digitalization in the field of nature and wildlife conservation<br>attitude:<br>- Committed to sustainable development, animal protection and modern environmentally conscious solutions.<br>- Open to the green, ethical and legally compliant use of information and communication technologies.<br>autonomy and responsibility:<br>- Takes responsibility for enforcing the principles of environmental sustainability in his/her field of expertise.</td></tr>
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- Able to independently synthesize the connections between technological developments and legal regulations.

**Tantárgy tematikus leírása:**

**Course description (Fulltime):**

1. Introduction: The fusion of technology and administrative systems in the 21st century. The meeting of the digital state and green goals.
2. Fundamentals of public administration technology: The theory of administrative technology and administrative workflow organization in environmental administration.
3. Modernization of hunting and nature conservation administration: Historical overview and modernization trends in the 21st century.
4. Drones in the service of nature conservation: The use of unmanned aerial vehicles (UAVs) in mapping and counting protected flora and fauna.
5. Drone technology in game management: Game damage assessment, thermal camera game rescue (e.g. kid rescue before mowing), combating poaching with modern tools.
6. Mobile applications in e-public services: The possibilities of electronic administration in everyday communication between hunting licensees and authorities.
7. Consumer and professional mobile applications: Wildlife collision reporting, invasive species monitoring, citizen science applications.
8. Geographic Information Systems (GIS) and remote sensing: The role of satellite data and digital maps in the zoning of nature reserves and habitat development.
9. IoT (Internet of Things) and smart sensors: Operation and legal framework of wildlife cameras, GPS collars, acoustic forest monitoring systems.
10. Artificial intelligence and machine learning: The role of image analysis algorithms in biodiversity monitoring and population estimation.
11. Human-wildlife conflicts in the modern era: The appearance of wild animals in populated areas (indoor wildlife problem) and its complex management.
12. Sustainable nature and animal protection: Ethical, technological and regulatory aspects of the protection and welfare of wild animals.
13. Cybersecurity and data protection in green technologies: Protection of sensitive environmental data (e.g. nesting sites, security of anti-poaching systems).
14. Summary and semester evaluation: Interactive roundtable discussion on future technological directions in the light of sustainability.

**Full-time course:**
**Lecture time:**

**Correspondence/Diploma correspondence course:**
**(In the Correspondence/Diploma correspondence course, the topics are hold in the form of consolidated, 9-hour block lectures.)**

**Method and evaluation of mid-term examination:**

The condition for obtaining the report is the presentation of a freely chosen technological solution with a nature conservation or wildlife management aspect during the semester (in the form of a maximum 15-20 minute short presentation and a 8-10 page essay). The focus of the essay/short presentation can also be adapted to the student's own field of expertise (e.g. technical design for engineering students, cost-effectiveness for farmers, regulatory background for lawyers).

**Method and evaluation of completing the colloquium:**
The course ends with a report. It is evaluated on a five-point (1-5) scale based on the quality of the mid-term assignment and the written/oral examination at the end of the semester, which assesses the theoretical and practical material covered during the semester.

**Required literature::**

1. **Dr. Szabó Balázs:** *A magyar közigazgatás technikai-technológiai fejlesztése a XXI. század első két évtizedében.* PhD értekezés, Miskolci Egyetem, Miskolc, 2020.
2. **Szabó B.:** *Special administrative fields: the connection between e-Government and Hunting.* (Miskolc, 2013).
3. **Szabó B.:** *New tendencies in e-government in the European Union.* (Curentul Iuridic, 2017).
4. **Szabó B.:** *Good practices in mobile applications as a passport/document template...* (Juridica et Politica, Miskolc). (Fókusz: mobil applikációk a dokumentumkezelésben).

**Suggested literature:**

1. **Cseh G. – Czékmann Zs. – Ritó E. – Szabó B.:** *The possibilities of local governments in the digital age.* (Publ. Univ. Miskolcinensis, 2019). (Fókusz: okos városok és környezetvédelem).
2. **Cseh G. – Czékmann Zs. – Szabó B. – Maksó B. – Kiss L. N.:** *Is virtual reality really necessary for local governments?...* (Curentul Juridic, 2016). (Fókusz: VR és szimulációk a közszolgálatban).
3. **Torma A. – Szabó B.:** *New tendencies in the Hungarian Public Administration.* (The challenges of the 21st Century in Law and Public Administration, Miskolc).

**Other informations:**