**Lehrform (teaching format) / SWS (hours per week):** 2VL + 2UE

**Kreditpunkte (credit points):** 6

**Turnus (frequency):** usually, each summer term

**Inhaltliche Voraussetzungen (content-related prior knowledge/skills):** NONE

**Sprache (language):** English

**Lehrende (teaching staff):** AG Digital Public (Prof. Dr. Dr. Björn Niehaves et al.)

<table>
<thead>
<tr>
<th>Studiengang (degree program)</th>
<th>Module</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informatik (Master)</td>
<td>ggf. IMVA</td>
<td>from 1st sem.</td>
</tr>
<tr>
<td>Management Information Systems (Master)</td>
<td>MIS-INF2</td>
<td>from 1st sem.</td>
</tr>
<tr>
<td>Komplexes Entscheiden (Master)</td>
<td>M8</td>
<td>from 2nd sem.</td>
</tr>
<tr>
<td>Informatik (Bachelor VF)</td>
<td>(nur Freie Wahl)</td>
<td>from 4th sem.</td>
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</tbody>
</table>

**Learning Outcome:**

By the end of this course, students will be able to:

- Understand and differentiate the basic concepts of DSS and identify its primary objectives, key components, and architecture.
- Apply common decision theories and models utilized for DSS, such as deterministic, probabilistic, and multi-criteria models (e.g., MAUT).
- Investigate how DSS can enhance decision quality in practice, e.g., using DSS to promote creativity, sustainable development, and public decision-making.
- Understand the opportunities and challenges of artificial intelligence in DSS.
- Synthesize knowledge through student research projects on DSS-related topics.
- Be able to explain and name the UN Sustainable Development Goals (SDGs).

**Contents:**

The course offers insights into the fascinating and versatile world of Decision Support Systems (DSS). Building on decision-theoretical frameworks, the concept of DSS is explained using real-world application examples about the UN’s Sustainable Development Goals (SDGs), emphasizing public decision-making. Students can collaboratively apply and expand the knowledge gained from the course in student research projects.

- Introduction to Decision Support Systems (DSS): definition and goals, components and architecture, classification and differentiation.
- Theoretical basics of human decision making: rational decision making, heuristics and biases, decision strategies, decision models, debiasing.
- Decision support systems in science and practice: Current applications and opportunities for improving decision-making by using DSS with a focus on public administration (e.g., sustainable procurement processes, resource management, and urban planning) and creative processes (e.g., fostering innovation, inspiration, and creation of novel ideas).
Intelligent decision support systems: Artificial intelligence and DSS; application examples.

The course addresses (as exemplary themes) the following UN Sustainable Development Goals (SDGs):

- **Goal 8 (Decent Work and Economic Growth):** The course illustrates various capabilities of how DSS can assist institutions and public agencies in servicing customers.
- **Goal 11 (Sustainable Cities and Communities):** Students receive insights into the possibilities of applying DSS in urban planning using application examples (e.g., 3D models).

**Hinweise (remarks):** The table lists only the primary / most specific modules to which this course is assigned.