<table>
<thead>
<tr>
<th>Subject name</th>
<th>Biological Clocks in Living Organisms</th>
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<tbody>
<tr>
<td>Subject code</td>
<td>H.HTCa.BIO9.SM.HZOXY</td>
</tr>
<tr>
<td>Department</td>
<td>Animal Biotechnology</td>
</tr>
<tr>
<td>Faculty</td>
<td>Animal Sciences</td>
</tr>
<tr>
<td>Subject supervisor/Lecturer</td>
<td>Professor Dorota Zięba-Przybylska</td>
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**General information**

<table>
<thead>
<tr>
<th>semester</th>
<th>summer</th>
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<tbody>
<tr>
<td>ECTS credits</td>
<td>2</td>
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<tr>
<td>Lectures total</td>
<td>15 hrs</td>
</tr>
<tr>
<td>Laboratories</td>
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**Objective and general description**

The main objective of the course is the characterization of chronobiology as a field of biology that examines periodic (cyclic) phenomena in living organisms and their adaptation to solar and lunar related rhythms. These cycles are known as biological rhythms. The related terms – chronomics and chronome will be described and the molecular mechanisms involved in chronobiological phenomena or the more quantitative aspects of chronobiology, particularly where comparison of cycles between organisms will be required.

**Lectures:**
- Introduction to biological rhythms and their characteristics
- Biological clocks in microorganisms
- Molecular aspects of biological clocks mechanisms and clock genes
- Insects’ and mammalian clocks
- Neurohormonal mechanisms of a biological clock
- Cell cycle in relation to biological clocks
- Chronobiology of periodic work in humans.

**Assessment method**

examination

**References**

- Circadian clocks in daily and seasonal control development. Science 301, 2003-316