

**Basic Space Physics**  
- **COURSE SYLLABUS**



<b>1.</b>	<b>Course title:</b> <i>Basic Space Physics</i>
<b>2.</b>	<b>Lecturer:</b> <i>Prof. dr hab. Jan Błęcki</i>
<b>3.</b>	<b>Field, type and level of studies, year of study:</b> <i>Space plasma, magnetosphere, ionosphere, spce weather, all years of study</i>
<b>4.</b>	<b>Course character:</b> <i>monographic lecture,</i>
<b>5.</b>	<b>Teaching method:</b> <i>traditional or on-line</i>
<b>6.</b>	<b>Language:</b> <i>English, Polish, depending on the audience</i>
<b>7.</b>	<b>Course type and number of hours:</b> <i>lecture, 36h</i>
<b>8.</b>	<b>Estimated load of student's independent work:</b> <i>10h</i>
<b>9.</b>	<b>Total workload and number of ECTS points:</b> <i>eg., 10 h, 3 ECTS</i>
<b>10.</b>	<b>Short description and main focus of the course:</b> <ol style="list-style-type: none"> <li>1. <i>The Earth in the Solar System and in the Universe .</i></li> <li>2. <i>Earth's atmosphere –its structure and dynamics.</i></li> <li>4. <i>Plasma – definition and fundamental features .</i></li> <li>5. <i>The Sun –its structure, activity and Solar Wind.</i></li> <li>6. <i>Magnetic Field of the Earth.</i></li> <li>7. <i>The Ionosphere – origin, structure and variability.</i></li> <li>8. <i>Propagation of the electromagnetic waves in the ionosphere and influence of the disturbances in space on it.</i></li> <li>9. <i>The Magnetosphere – creation, structure and processes within it.</i></li> <li>10. <i>Disturbances in the near Earth space- their sources and physical processes responsible for their.</i></li> <li>11. <i>Overall picture of the Solar-Earth connection s- Space Weather.</i></li> <li>12. <i>Cosmic rays – basic information.</i></li> <li>13. <i>Influence of the disturbances in the space around Earth on the technical constructions in space and on the ground and on the people .</i></li> </ol>
<b>11.</b>	<b>References: Wolfgang Baumjohann, Rudolf Treumann, Basic space plasma physics. May-Britt Kallenrode, Space Physics. Tamas I.Gombosi, Physics of the Space Environment.</b>

<b>12.</b>	<b>Prerequisites:</b> <i>Good knowledge of physics and mathematics</i>								
<b>13.</b>	<table border="1"> <tr> <td><b>Educational outcomes:</b></td> <td><b><u>PQF level 8 codes:</u></b></td> </tr> <tr> <td><i>Knowledge:</i></td> <td><i>eg., P8S_WG, ...</i></td> </tr> <tr> <td><i>Practical Skills:</i></td> <td><i>eg., P8S_UW, ...</i></td> </tr> <tr> <td><i>Social Skills:</i></td> <td><i>eg., P8S_KK, ...</i></td> </tr> </table>	<b>Educational outcomes:</b>	<b><u>PQF level 8 codes:</u></b>	<i>Knowledge:</i>	<i>eg., P8S_WG, ...</i>	<i>Practical Skills:</i>	<i>eg., P8S_UW, ...</i>	<i>Social Skills:</i>	<i>eg., P8S_KK, ...</i>
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<b>14.</b>	<b>Evaluation of the educational outcomes:</b> <i>written exam,</i>								
<b>15.</b>	<b>Criteria to complete the course:</b> <i>Presence on lectures, final exam min.60% correct answers</i>								
<b>16.</b>	<b>Contact with the lecturer:</b> <i>Email:jblecki@cbk.waw.pl, room 25.</i>								