The aim of the course is to help students acquire basic knowledge about the physical properties of materials. At the end of the course the student should be able to:

? Understand the basics of solid state physics as well as the behaviour of electrons in solids
? Classify materials according to their electrical behavior. Relate the macroscopic electrical behavior with the behavior of electrons in materials
? Distinguish the different magnetic responses of materials. Identify key parameters of ferro magnetic and ferrimagnetic materials
Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 45h 30.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group: 0h 0.00%</td>
</tr>
<tr>
<td></td>
<td>Hours small group: 15h 10.00%</td>
</tr>
<tr>
<td></td>
<td>Guided activities: 90h 60.00%</td>
</tr>
</tbody>
</table>

Content

**UNIT I: Introduction to Solid State Physics**

Learning time: 50h
- Theory classes: 12h
- Practical classes: 8h
- Self study: 30h

Description:

**UNIT II: Electrical behavior of materials**

Learning time: 50h
- Theory classes: 12h
- Practical classes: 8h
- Self study: 30h

Description:

**UNIT III: Magnetic behavior of materials**

Learning time: 50h
- Theory classes: 12h
- Practical classes: 8h
- Self study: 30h

Description:
Types of magnetism. Curie temperature. Ferro and ferrimagnetic materials. Domains. superconductivity

Qualification system

Final Exam 50% + 30% Partial Tests + 5% presentation + 15% lab
NO reevaluation
Bibliography

Basic:


Complementary: