Programme syllabus

Master's Programme, Nanotechnology, 120 credits
Masterprogram, nanoteknik
120.0 credits

Valid for students admitted to the education from autumn 07 (HT - Autumn term; VT - Spring term).

This is a translation of the Swedish, legally binding, programme syllabus.

Programme objectives

Knowledge and understanding

Skills and abilities

Ability to make judgements and adopt a standpoint

Extent and content of the programme

Eligibility and selection

Implementation of the education

Courses

The programme is course-based. Lists of courses are included in appendix 1.

Grading system

Courses in the first and the second cycle are graded on a scale from A to F. A-E are passing grades, A is the highest grade. The grades pass (P) and fail (F) are used for courses under certain circumstances.

Appendix 1 - Course list
Appendix 2 - Programme syllabus descriptions
Appendix 1: Course list

Master's Programme, Nanotechnology, 120 credits (TNTEM), Programme syllabus for studies starting in autumn 2007

**General courses**

**Year 1**

**Mandatory courses (45.0 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH2651</td>
<td>Semiconductor Theory and Device Physics, General Course</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IH2654</td>
<td>Nanoelectronics</td>
<td>9.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IM2651</td>
<td>Physics of Electronic Materials</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IM2652</td>
<td>Surface Physics, Basic Course</td>
<td>6.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IM2655</td>
<td>Introduction to Nanomaterials and Nanotechnology</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IM2656</td>
<td>Bio-Nanotechnology</td>
<td>7.5</td>
<td>Second cycle</td>
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**Optional courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>IH2655</td>
<td>Design and Characterisation of Nano- and Microdevices</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IH2656</td>
<td>Advanced Semiconductor Materials</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IM2653</td>
<td>Molecular Electronics</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IT2655</td>
<td>Frontiers of Microelectronics and Information Technology</td>
<td>6.0</td>
<td>Second cycle</td>
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**Conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
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<tbody>
<tr>
<td>IH2653</td>
<td>Simulation of Semiconductor Devices</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IH2658</td>
<td>Semiconductor Theory and Device Physics, Advanced Course</td>
<td>6.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IM2654</td>
<td>Smart Electronic Materials</td>
<td>6.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>Course code</td>
<td>Course name</td>
<td>Credits</td>
<td>Edu. level</td>
</tr>
<tr>
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<tr>
<td>SK2700</td>
<td>Mesoscopic Physics</td>
<td>8.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>SK2710</td>
<td>Spin Electronics</td>
<td>8.0</td>
<td>Second cycle</td>
</tr>
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</table>

**Year 2**

**Mandatory courses (13.5 credits)**

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course name</th>
<th>Credits</th>
<th>Edu. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK2036</td>
<td>Theory and Methodology of Science with Applications (Natural and Technological Science)</td>
<td>7.5</td>
<td>Second cycle</td>
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<tr>
<td>IM2657</td>
<td>Nanostructured Materials and Self Assembly</td>
<td>6.0</td>
<td>Second cycle</td>
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</table>

**Conditionally elective courses**

<table>
<thead>
<tr>
<th>Course code</th>
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</thead>
<tbody>
<tr>
<td>BB2410</td>
<td>Molecular Biotechnology for Nanotechnology</td>
<td>7.5</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IF1621</td>
<td>Quantum Mechanics I</td>
<td>7.5</td>
<td>First cycle</td>
</tr>
<tr>
<td>IM2658</td>
<td>Experimental Techniques - Bulk</td>
<td>6.0</td>
<td>Second cycle</td>
</tr>
<tr>
<td>IM2663</td>
<td>Magnetism and Magnetoelectronics</td>
<td>7.5</td>
<td>Second cycle</td>
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Appendix 2: Specialisations

Master's Programme, Nanotechnology, 120 credits (TNTEM), Programme syllabus for studies starting in autumn 2007

This programme has no specialisations.