# Model Curriculum Master Mathematical Physics with Focus on Quantum Field Theory and Functional Analysis

<table>
<thead>
<tr>
<th>1st Sem.</th>
<th>2nd Sem.</th>
<th>3rd Sem.</th>
<th>4th Sem.</th>
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<tr>
<td><strong>12-PHY-MPMP1</strong> (10 CP) Mathematical Physics 1</td>
<td><strong>12-PHY-MWPTET4</strong> (10 CP) Relativistic Quantum Field Theory or <strong>12-PHY-MWPQFG2</strong> (10 CP) Cosmology</td>
<td><strong>12-PHY-MWPQFG3</strong> (10 CP) Quantum Field Theory on Curved Space Times or <strong>10-MAT-MPSTAG</strong> (10 CP) Selected Topics in Algebra and Geometry or <strong>12-PHY-MWPSTP1</strong> (10 CP) Quantum Field Theory of Many-Particle Systems</td>
<td><strong>Master’s Thesis</strong> (30 CP)</td>
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<td><strong>12-PHY-MPMP2</strong> (10 CP) Mathematical Physics 2</td>
<td><strong>10-MAT-MPFOP1</strong> (10 CP) Functional Analysis/Operator Theory</td>
<td><strong>12-PHY-MWPQFG3</strong> (10 CP) Quantum Field Theory on Curved Space Times or <strong>10-MAT-MPSTAG</strong> (10 CP) Selected Topics in Algebra and Geometry or <strong>12-PHY-MWPSTP1</strong> (10 CP) Quantum Field Theory of Many-Particle Systems</td>
<td><strong>12-PHY-MPFS</strong> (15 CP) Research Practice</td>
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<tr>
<td><strong>12-PHY-MWPT1</strong> (10 CP) Advanced Quantum Mechanics</td>
<td><strong>10-MAT-MPS1</strong> (10 CP) Stochastic Processes I or <strong>10-MAT-MPAN1</strong> (10 CP) Advanced Analysis – PDE</td>
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**Courses Overview**

- **1st Semester**
  - Mathematical Physics 1
  - Mathematical Physics 2
  - Advanced Quantum Mechanics

- **2nd Semester**
  - Relativistic Quantum Field Theory or Cosmology
  - Functional Analysis/Operator Theory
  - Stochastic Processes I or Advanced Analysis – PDE

- **3rd Semester**
  - Quantum Field Theory on Curved Space Times or Selected Topics in Algebra and Geometry or Quantum Field Theory of Many-Particle Systems
  - Quantum Field Theory and Gravity or Quantum Field Theory

- **4th Semester**
  - Master’s Thesis (30 CP)