



Master's program: "Fundamental Physics "

Qualification: Master of Physics

1. **Program Brief Description and Structure:** Master's Program "Fundamental Physics " is carried at the Department of Physics.

Number of credits: 120 ECTS:

Mandatory courses – 30 ESTC

Selective Module courses – 60 ECTS

Master's Thesis – 30 ESTC (Research component, mandatory)

Program consists of following selective Modules:

- **Condensed Matter Physics**
- **Astrophysics and Plasma Physics**
- **Atomic Physics and Elementary Particle Physics**

To obtain the degree of Master of Physics student must make a choice of one of the concrete modules with corresponding subject list for the respective physics specialty from the following: Condensed Matter Physics, Astrophysics, Plasma Physics, Atomic Physics, Elementary Particle Physics, Nonlinear Phenomena Physics (see the supplement).

Program duration: 4 Semester/2 Year

Program Leaders: Prof. Nana Shataashvili (coordinator), Prof. Merab Eliashvili, Prof. Archil Ugulava, Prof. Tamaz Kereselidze

Learning language: Georgian

2. Program Educational Objectives

Main objective is:

- **to prepare the internationally recognized competitive, highly qualified Master of Physics in Fundamental Physics with qualifications in: Condensed Matter Physics; Astrophysics; Plasma Physics; Atomic Physics; Elementary Particle Physics; Nonlinear Phenomena Physics.**
- **To support the sustainable development of different directions of Physics through attracting and strengthening/establishing the young professionals.**

Above means the preparation of Master of Physics with deep and multidirectional knowledge and practical skills in the fields of Physics listed above and includes:

- a) The Fundamental (both theoretical and experimental) study and research of physical processes and phenomena happening in the Universe as well as in Laboratory conditions.



- b) Educating the methods of mathematical modeling of physical processes, creation of corresponding algorithms and computing programs, their visualisation and performing the numerical experiments.
- c) To prepare the researcher/academic personal with independent and creative working skills, which will be capable: to continue study at PHD level and conduct research in Physics and related fields generating the novel original ideas and suggesting the ways to solve the specific problems as well as conduct them based on acquired systematic knowledge.

3. Student Outcomes

Graduating the studies Master of Physics degree holder will have a high qualification and modern international standard level knowledge in Condensed Matter Physics, Astrophysics, Aeronomy, Plasma Physics, Atomic, Elementary Particles, High Energy Theory, Relativity, Nonlinear Phenomena Physics, Earth Atmosphere Physics, Mathematical Physics, Quantum Field Theory, Elementary Particle Physics, Numerical Modeling of Physics Problems directions and will be capable to continue studies at PHD.

Graduating the Master's program "Fundamental Physics" degree holder acquires the following competences (which are achieved through common Mandatory and Selected specialization modules based on all mandatory courses joint results):

Correspondingly to the selected specialization a degree holder:

- Analyzes the main principles and concepts of Condensed Matter Physics / Astrophysics / Plasma Physics / Atomic Physics / Elementary Particle Physics / Nonlinear Phenomena Physics.
- Analyzes the physical and mathematical basics of computer modeling and its application perspectives.
- Applies the acquired knowledge in scientific, technological and academic activities in Condensed Matter Physics / Astrophysics / Plasma Physics / Atomic Physics / Elementary Particle Physics / Nonlinear Phenomena Physics and related fields.
- Analyzes the theoretical fundamentals of modern research methods in Condensed Matter Physics; Astrophysics and Plasma Physics; Atomic and Elementary Particle Physics; High Energy Physics Theory; Particle Experimental Physics; Nonlinear Phenomena Physics; Earth Atmosphere Physics, Mathematical Physics..
- Based on the deep and systematic knowledge produces / suggests the novel original ideas and finds the ways of the solutions for the specific problems.

Correspondingly to the specialization a degree holder is capable:

- To conduct the research activity in the listed above fields of Physics: performing the theoretical calculations; carrying out the laboratory and simulation experiments / modeling.
- To understand easily / quickly the problematics in Physics related fields and apply the obtained information in own research.
- To work effectively in new and unexpected multi- and inter-disciplinary environment as a team member as well as independently.
- To analyze and synthesize critically the information (including the complex and incomplete recent investigations data) and generate the justified conclusions based on them.
- To present and defend with solid arguments his/her own approaches, methodology, obtained results, conclusions with target group / auditorium.



Curriculum

| N | code | Courses | ECTS | Type of Study Courses /Type of Modules: Faculty / Mandatory / Optional | | | | | | | Prerequisites | Study Semester | | | | Lecturer / Lecturers |
|---|-----------------------|--|------------|--|----|----|----|------------------------------|-------------|-------|---------------|----------------|----|-----|--|----------------------|
| | | | | Student's hours per semester | | | | | independent | Total | | I | II | III | IV | |
| | | | | Contact | | | | Midterm and final exam hours | | | | | | | | |
| lecture | Seminar/working group | practical | laboratory | | | | | | | | | | | | | |
| Mandatory Courses - 30 ESTC | | | | | | | | | | | | | | | | |
| 1 | FPh1 | Introduction to Condensed Matter Physics | 5 | 30 | 15 | 0 | 0 | 7 | 73 | 125 | - | 5 | | | A. Shengelaya / T. Tchelidze | |
| 2 | FPh2 | Quantum Field Theory I | 5 | 30 | 15 | 15 | 0 | 7 | 58 | 125 | - | 5 | | | M. Eliashvili / G. Tsitsishvili | |
| 3 | FPh3 | Radiation Physics | 5 | 30 | 15 | 0 | 0 | 7 | 73 | 125 | - | 5 | | | N. Shatashvili / A. Tevzadze | |
| 4 | FPh4 | Nonlinear Phenomena I | 5 | 30 | 15 | 0 | 0 | 5 | 75 | 125 | - | 5 | | | A. Ugulava / R. Khomeriki / G. Mchedlishvili | |
| 5 | FPh5 | Supplementary topics of Quantum Mechanics | 5 | 30 | 15 | 15 | 0 | 7 | 58 | 125 | - | 5 | | | T. Kereselidze / Z. Matchavariani | |
| 6 | FPh6 | Supplementary topics of Statistical Physics | 5 | 30 | 15 | 0 | 0 | 5 | 75 | 125 | - | 5 | | | A. Ugulava / Z. Toklikishvili | |
| Specialization Selective Module - "Condensed Matter Physics" | | | | | | | | | | | | | | | | |
| 60 ESTC - 48 ECTS Module Mandatory, 12 ESTC Module Optional | | | | | | | | | | | | | | | | |
| Module Mandatory Courses - 48 ECTS | | | | | | | | | | | | | | | | |
| 7 | FPh7 | Theory of Phase Transitions and Critical Phenomena | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 1, 6 | | 6 | | G. Tsitsishvili / A. Ghonghadze | |
| 8 | FPh9 | Nonlinear Phenomena II | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 4 | | 6 | | R. Khomeriki / O. Kharshiladze | |
| 9 | FPh10 | Optical Properties of Condensed Matter | 6 | 30 | 0 | 15 | 0 | 7 | 98 | 150 | 1 | | 6 | | T. Tchelidze | |
| 10 | FPh11 | Physics of Magnetism I | 6 | 30 | 0 | 30 | 0 | 5 | 85 | 150 | 1 | | 6 | | A. Ugulava / G. Mchedlishvili | |
| 11 | FPh12 | Physics of Magnetism II | 6 | 30 | 0 | 15 | 15 | 7 | 83 | 150 | 10 | | 6 | | G. Mamniashvili / Z. Shermadini | |



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|--|-------|--|----|----|----|----|----|---|-----|-----|------------|--|----|--|--|
| 12 | APh7 | Radiospectroscopy I | 6 | 30 | 0 | 15 | 15 | 7 | 83 | 150 | | | 6 | | D. Daraselia / D. Japaridze |
| 13 | APh8 | Radiospectroscopy II | 6 | 30 | 0 | 15 | 15 | 7 | 83 | 150 | 12 | | 6 | | D. Daraselia / D. Japaridze |
| 14 | FPh13 | Classical and High Temperature Superconductivity | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 1; 10 | | 6 | | A. Shengelaya |
| Module Optional Courses - 12 ECTS | | | | | | | | | | | | | | | |
| 15 | FPh8 | Quantum Statistics | 6 | 30 | 0 | 15 | 0 | 7 | 98 | 150 | 6 | | 6 | | M. Eliashvili / A. Ugulava |
| 16 | FPh15 | Symmetry and Group Theory in Solid State Physics | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 5 | | 6 | | T. Tchelidze |
| 17 | APh15 | Nuclear Magnetic Resonance Methods in Solid State Physics | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 5 | | 6 | | G. Mamniashvili / Z. Shermadini |
| 18 | FPh16 | Quantum Fields and Quantum Systems in Low Dimensions | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 2 | | 6 | | M. Eliashvili / G. Tsitsishvili |
| 19 | FPh17 | Low Temperature Physics and Technology | 6 | 30 | 0 | 0 | 30 | 7 | 83 | 150 | 7; 10 | | 6 | | G. Mamniashvili |
| 20 | FPh14 | Quantum Plasma | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 6 | | 6 | | N. Shatashvili / V. Berezhiani |
| | FPh47 | Symmetries and Gauge Theories | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 2 | | 6 | | M. Eliashvili / G. Tsitsishvili |
| | | Pre-Thesis in Condensed Matter Physics – Selective * | 6 | | 15 | | | | 135 | 150 | 50 Credits | | 6 | | Personnel of the Department / Institutes |
| | | Master's Thesis in Condensed Matter Physics - Mandatory | 30 | | 60 | | | | 690 | 750 | | | 30 | | Personnel of the Department / Institutes |
| Specialization Selective Module - "Astrophysics and Plasma Physics" | | | | | | | | | | | | | | | |
| 60 ESTC - 48 ECTS Module Mandatory, 12 ECTS Module Optional | | | | | | | | | | | | | | | |
| Module Mandatory Courses - 48 ESTC | | | | | | | | | | | | | | | |
| 21 | FPh18 | Basics in Plasma Physics I | 6 | 30 | 0 | 30 | 0 | 7 | 83 | 150 | 3; 6 | | 6 | | N. Shatashvili / V. Berezhiani |
| 22 | FPh19 | Basics in Plasma Physics II | 6 | 30 | 0 | 30 | 0 | 7 | 83 | 150 | 21 | | 6 | | N. Shatashvili / V. Berezhiani |
| 23 | FPh20 | Magnetic Hydrodynamics I | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 3; 6 | | 6 | | N. Shatashvili / A. Tevzadze |
| 24 | FPh21 | Magnetic Hydrodynamics II | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 23 | | 6 | | N. Shatashvili / A. Tevzadze |
| 25 | FPh22 | Astrophysics and Plasma Physics Problems Modeling I | 6 | 30 | 0 | 30 | 0 | 7 | 83 | 150 | - | | 6 | | A. Tevzadze / O. Kharshiladze |



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|--|-------|--|---|----|----|----|----|---|----|-----|--------|--|---|--|--|
| 26 | FPh23 | Astrophysics and Plasma Physics Problems Modeling II | 6 | 30 | 0 | 30 | 0 | 7 | 83 | 150 | 25 | | 6 | A. Tevzadze / O. Kharshiladze | |
| 27 | FPh24 | Gravitation and Cosmology I | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 3; 2 | | 6 | M. Gogberashvili / M. Eliashvili | |
| 28 | FPh25 | Gravitation and Cosmology II | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 27 | | 6 | M. Gogberashvili / M. Eliashvili | |
| Module Optional Courses - 12 ECTS | | | | | | | | | | | | | | | |
| 29 | FPh10 | Optical Properties of Condensed Matter | 6 | 30 | 0 | 15 | 0 | 7 | 98 | 150 | 1 | | 6 | T. Tchelidze | |
| 30 | FPh9 | Nonlinear Phenomena II | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 4 | | 6 | R. Khomeriki / O. Kharshiladze | |
| 31 | FPh8 | Quantum Statistics | 6 | 30 | 0 | 15 | 0 | 7 | 98 | 150 | 6 | | 6 | M. Eliashvili / A. Ugulava / G. Tsitsishvili | |
| 32 | FPh26 | Relativistic Optics and Super-strong Radiation Plasma Physics | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 3; 4 | | 6 | V. Berezhiani / N. Shatashvili | |
| 33 | FPh27 | Physics of Compact Objects | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 21; 27 | | 6 | N. Shatashvili / A. Tevzadze | |
| 34 | FPh28 | Astrophysical Flows | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 6; 23 | | 6 | N. Shatashvili / A. Tevzadze | |
| 35 | FPh29 | Solar Physics | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 21; 23 | | 6 | N. Shatashvili / A. Tevzadze | |
| | FPh30 | Relativistic Plasma | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 21 | | 6 | N. Shatashvili / V. Berezhiani | |
| 37 | FPh14 | Quantum Plasma | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 6 | | 6 | N. Shatashvili / V. Berezhiani | |
| 38 | FPh31 | Experimental Plasma Physics | 6 | 30 | 0 | 0 | 30 | 7 | 83 | 150 | 21 | | 6 | S. Nanobashvili / G. Gelashvili | |
| 39 | FPh48 | Astroparticle Physics | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 2 | | 6 | R. Shanidze / M. Gogberashvili | |
| 40 | APh26 | Waves in Earth Crust and Atmosphere | 6 | 30 | 15 | 0 | 45 | 7 | 53 | 150 | 3 | | 6 | O. Khardshiladze / R. Zaridze | |
| 41 | FPh32 | Solar-Terrestrial Connections | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 21; 23 | | 6 | O. Kharshiladze / Z. Kereselidze | |
| 42 | FPh33 | Nonlinear Phenomena Modelling in Ionosphere and Earth Atmosphere | 6 | 30 | 0 | 30 | 0 | 7 | 83 | 150 | 30 | | 6 | O. Kharshiladze / Z. Kereselidze | |



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|---|-------|---|----|----|----|----|----|---|-----|-----|------------|--|--|---|----|--|
| | | Pre-Thesis in Astrophysics / Plasma Physics – Selective * | 6 | | 15 | | | | 135 | 150 | 50 Credits | | | 6 | | Personnel of the Department / Institutes |
| | | Master's Thesis in Astrophysics / Plasma Physics - Mandatory | 30 | | 60 | | | | 690 | 750 | | | | | 30 | Personnel of the Department / Institutes |
| Specialization Selective module - "Atomic Physics and Elementary Particle Physics" | | | | | | | | | | | | | | | | |
| 60 ESTSC- 48 ECTS Module Mandatory, 12 ECTS Module Optional | | | | | | | | | | | | | | | | |
| Module Mandatory Courses - 36 ECTS | | | | | | | | | | | | | | | | |
| 43 | FPh36 | Theory of Elementary Particles I | 6 | 30 | 15 | 15 | 0 | 7 | 83 | 150 | 5 | | | 6 | | M. Eliashvili / G. Tsitsishvili / M. Gogberashvili |
| 44 | FPh46 | Theory of Elementary Particles II | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 2; 43 | | | 6 | | M. Eliashvili / G. Tsitsishvili / M. Gogberashvili |
| 45 | FPh37 | Experimental Research Methods in Particle Physics | 6 | 30 | 0 | 0 | 30 | 7 | 83 | 150 | 5 | | | 6 | | R. Shanidze / M. Nioradze |
| 46 | FPh39 | Scattering theory | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 5 | | | 6 | | T. Kereselidze / Z. Matchavariani |
| 47 | FPh41 | Statistical Modeling and Data Statistical Analysis | 6 | 30 | 0 | 0 | 30 | 7 | 83 | 150 | 5 | | | 6 | | R. Shanidze / M. Tabidze |
| 48 | FPh24 | Gravitation and Cosmology I | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 3; 2 | | | 6 | | M. Gogberashvili / M. Eliashvili |
| Module Mandatory Elective Courses : 12 ESTC for "Atomic Physics" (AP) or 12 – for Elementary Particle Physics (EPP) | | | | | | | | | | | | | | | | |
| 49 | FPh34 | Experimental Nuclear Physics - AP | 6 | 30 | 15 | 15 | 0 | 7 | 83 | 150 | 5 | | | 6 | | Z. Matchavariani / T. Kereselidze |
| 50 | FPh38 | Quantum Field Theory II - EPP | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 2 | | | 6 | | M. Eliashvili / G. Tsitsishvili |
| 51 | FPh40 | Experimental Research Methods in Physics of Atomic and Molecular Processes - AP | 6 | 30 | 0 | 0 | 30 | 7 | 83 | 150 | 5 | | | 6 | | R. Lomsadze / M. Gochitashvili |
| 52 | FPh25 | Gravitation and Cosmology II – EPP | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 27 | | | 6 | | M. Gogberashvili / M. Eliashvili |
| Module Optional Courses - 12 ESTC | | | | | | | | | | | | | | | | |
| 53 | FPh35 | Experimental Nuclear Physics | 6 | 30 | 0 | 0 | 30 | 7 | 83 | 150 | 5 | | | 6 | | S. Tsereteli / R. Shanidze |



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|---|-------|--|----|----------|----|-------------|----|---|-----|-----|------------|-----|---|----|--|
| 54 | FPh42 | Physics of Accelerators | 6 | 30 | 0 | 0 | 15 | 7 | 98 | 150 | 5 | | 6 | | M. Nioradze / R. Shanidze |
| 55 | FPh47 | Symmetries and Gauge Theories | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 2 | | 6 | | M. Eliashvili / G. Tsitsishvili |
| 56 | FPh43 | Advanced Problems in Atomic and Nuclear Physics | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 5 | | 6 | | Z. matchavariani / M. Gochitashvili |
| 57 | FPh44 | Elementary Particles Experimental Physics | 6 | 30 | 0 | 0 | 30 | 7 | 83 | 150 | 5 | | 6 | | R. Shanidze / M. Nioradze |
| 58 | FPh48 | Astroparticle Physics | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 2 | | 6 | | r. Shanidze / M. Gogberashvili |
| 59 | FPh45 | Cosmic Ray Physics | 6 | 30 | 15 | 0 | 0 | 7 | 98 | 150 | 5 | | 6 | | S. Tsereteli / R. Shanidze |
| 60 | FPh18 | Basics of Plasma Physics I | 6 | 30 | 0 | 30 | 0 | 7 | 83 | 150 | 3; 6 | | 6 | | N. Shatashvili / V. Berezhiani |
| | | Pre-Thesis in Atomic Physics / Elementary Particle Physics – Selective * | 6 | | 15 | | | | 135 | 150 | 50 Credits | | 6 | | Personnel of the Department / Institutes |
| | | Master's Thesis in Atomic Physics / Elementary Particle Physics – Mandatory | 30 | | 60 | | | | 690 | 750 | | | | 30 | Personnel of the Department / Institutes o |
| Specialization - "Nonlinear Phenomena Physics" | | | | | | | | | | | | | | | |
| 60 ESTC - 48 ECTS Mandatory, 12 ECTS Optional | | | | | | | | | | | | | | | |
| Specialization Mandatory Courses 60 ESTC: FPh9, FPh10, FPh18, FPh19, FPh20, FPh21, FPh33, FPh41 | | | | | | | | | | | | | | | |
| Specialization Optional Courses - 12 ESTC : FPh8, FPh14, FPh15, FPh16, APh15, FPh11, FPh22 | | | | | | | | | | | | | | | |
| | | Pre-Thesis in Nonlinear Phenomena Physics – Selective * | 6 | | 15 | | | | 135 | 150 | | | 6 | | Personnel of the Department / Institutes |
| | | Master's Thesis in Nonlinear Phenomena Physics – Mandatory | 30 | | 60 | | | | | 750 | 50 Credits | | 6 | | Personnel of the Department / Institutes |
| | | English Language C1 level of Italian Language of A1 level / Georgian Language of A1 level – Selective for all Modules | 5 | 30 /0/ 0 | | 30 /6 0/ 60 | | | | 125 | | 5 5 | 5 | | |

* Mandatory for Double-Degree applicant students with the University of L'Aquila



Scheme for awarding the qualification
 Master's Program "Fundamental Physics"

| Master of Physics – 120 ESTC | | | | | |
|--|--|--|--|--|---|
| <i>Specialization:</i> Condensed Matter Physics | <i>Specialization:</i> Astrophysics | <i>Specialization:</i> Plasma Physics | <i>Specialization:</i> Atomic Physics | <i>Specialization:</i> Elementary Particle Physics | <i>Specialization:</i> Nonlinear Phenomena Physics |
| Program Mandatory Courses (30 ESTC) | | | | | |
| Total ESTC (30) | Total ESTC (30) | Total ESTC (30) | Total ESTC (30) | Total ESTC (30) | Total ESTC (30) |
| FPh1 | FPh1 | FPh1 | FPh1 | FPh1 | FPh1 |
| FPh2 | FPh2 | FPh2 | FPh2 | FPh2 | FPh2 |
| FPh3 | FPh3 | FPh3 | FPh3 | FPh3 | FPh3 |
| FPh4 | FPh4 | FPh4 | FPh4 | FPh4 | FPh4 |
| FPh5 | FPh5 | FPh5 | FPh5 | FPh5 | FPh5 |
| FPh6 | FPh6 | FPh6 | FPh6 | FPh6 | FPh6 |
| Module Mandatory Courses | | | | | |
| Total ESTC (48) | Total ESTC (48) | Total ESTC (48) | Total ESTC (48) | Total ESTC (48) | Total ESTC (48) |
| FPh7 | FPh18 | FPh18 | FPh24 | FPh24 | FPh9 |
| FPh9 | FPh19 | FPh19 | FPh34 | FPh25 | FPh10 |
| FPh10 | FPh20 | FPh20 | FPh36 | FPh36 | FPh18 |
| FPh11 | FPh21 | FPh21 | FPh37 | FPh37 | FPh19 |
| FPh12 | FPh22 | FPh22 | FPh39 | FPh38 | FPh20 |
| APh7 | FPh23 | FPh23 | FPh40 | FPh39 | FPh21 |
| APh8 | FPh24 | FPh24 | FPh41 | FPh41 | FPh33 |
| FPh13 | FPh25 | FPh25 | FPh46 | FPh46 | FPh41 |
| Module Optional Courses | | | | | |
| (Student must choose the specialization courses to complete 90 ESTC) | | | | | |
| Total ESTC (12) | Total ESTC (12) | Total ESTC (12) | Total ESTC (12) | Total ESTC (12) | Total ESTC (12) |
| FPh14 | FPh8 | FPh8 | FPh25 | FPh35 | FPh8 |
| FPh15 | FPh9 | FPh9 | FPh35 | FPh40 | FPh14 |
| APh15 | FPh26 | FPh26 | FPh38 | FPh45 | FPh15 |
| FPh16 | FPh30 | FPh30 | FPh42 | FPh42 | APh15 |
| FPh17 | FPh14 | FPh14 | FPh43 | FPh44 | FPh16 |
| FPh8 | APh26 | APh26 | FPh45 | FPh34 | FPh11 |



| | | | | | |
|--|--|--|--|---|---|
| FPh47 | FPh27 | FPh27 | FPh18 | FPh47 | FPh22 |
| | FPh28 | FPh28 | FPh48 | FPh48 | |
| | FPh29 | FPh29 | | | |
| | FPh31 | FPh31 | | | |
| | FPh33 | FPh33 | | | |
| | FPh10 | FPh10 | | | |
| | FPh48 | FPh48 | | | |
| Master's Thesis (30 ESTC) | | | | | |
| Master's Thesis in Condensed Matter Physics | Master's Thesis in Astrophysics | Master's Thesis in Plasma Physics | Master's Thesis in Atomic Physics | Master's Thesis in Elementary Particle Physics | Master's Thesis in Nonlinear Phenomena Physics |