

**UNIVERSITY OF TRIESTE
UNIVERSITY OF UDINE**

**ACADEMIC REGULATIONS
MASTER DEGREE PROGRAMMEME IN PHYSICS**

Master Degree Programme – Section LM-17

**DM 270/2004, art.12
R.D.A. art. 5**

Art. 1
General rules and objectives

1. The academic regulations of the Master Degree Programme in Physics, pursuant to and in accordance with Art. 12, Paragraph 1, of the D.M. 270/2004 and of the Agreement establishing the Master Degree Programme in Physics signed by the Deans of the University of Trieste and of the University of Udine on the 28th January 2010, specify the organizational aspECTS of the Programme.
2. The Regulations are approved by the deliberative bodies of both Universities, in compliance with the provisions of the University regulations, in accordance with the teaching order and respect for the freedom of teaching, and the rights and duties of teachers and students.
3. For the purposes of this document:
 - a) "Regulations" are the Academic Regulations of the Master Degree Programme in Physics;
 - b) "Agreement" is the agreement establishing the Master Degree Programme in Physics signed by the Deans of the University of Trieste and of the University of Udine on the 28th January 2010;
 - c) "Affiliated Universities" are the University of Trieste and the University of Udine;
 - d) "Teaching order" is the teaching order of the Master Degree Programme attached to the Academic regulations of the affiliated Universities;
 - e) "Faculties" are the Faculties of Mathematics, Physics and Natural Sciences of the University of Trieste and the University of Udine;
 - f) "Master Degree Programme" is the Master Degree Programme in Physics;
 - g) "Council on curriculum" is the Council on curriculum responsible for the teaching and examining carried out in the Department;
 - h) "Committee on teaching" is the committee on teaching of the Master Degree Programme in Physics;
 - i) "Dissertation committee" is the dissertation committee of the Master Degree Programme in Physics;
 - j) ECTS are the European University Credits;
 - k) SDS is the Scientific Disciplinary Sector;
 - l) Teaching and Management Committee is the temporary committee appointed pursuant to and in accordance with Art. 5.1 of the Agreement, replaced by the Board of Study;
 - m) AR are the Academic Regulations of the University of Trieste.

Art. 2
Subject of the Regulations

1. The Regulations define the rules for the application of the teaching order; it specifically defines:
 - a) the list of courses, with an indication of the SDS of reference, as well as other activities related to it;
 - b) the contingent modules which constitute the single course;
 - c) the specific objectives and credits of each course and of any other activity related to it;
 - d) any preparatory aspect of each course;
 - e) specific *curricula* and Programmes offered to students;
 - f) rules for the presentation of individual lecture lists, if necessary;
 - g) the different courses offered, including those off-site;
 - h) the premises where the courses take place;
 - i) the types of examinations and other procedures of assessment of the students' advancement;
 - j) the provisions regarding compulsory attendance;

- k) how to access the Programme.

Art. 3 Governance

1. The Master Degree Programme is governed by:
 - a) The Council on curriculum;
 - b) The President of the Council on curriculum;
 - c) The Committee on teaching;
 - d) The Dissertation committee;
 - e) The Committee on admissions
 - f) The Committee on coordination

2. The Council on curriculum is constituted by:
 - a) The professors of the affiliated Universities whose courses have been activated for the Master Degree Programme;
 - b) The professors whose course has been activated for the Master Degree Programme by contract or whose course has been activated for another Programme;
 - c) Students' representatives: one elected student for each activated Programme.
 - d) Members of the Teaching and Management Committee, until the activation of the second year, if not teaching on an activated course of the Programme.

Members referred to in c) and d) contribute to the quorum and the majority only when participating in the meeting.

Students' representatives hold office for one year and are elected at the beginning of the first semester, no later than the 31st December, by the students enrolled in the Master Degree Programme, according to limited voting system (each voter expresses one preference). Failure to appoint students' representatives shall not affect the activity of the Council on curriculum. The representative whose mandate ceases before time is replaced by the first non-elected of the same Programme.

Meetings of the Council on curriculum are valid even when conducted by videoconference.

3. The Council on curriculum:
 - a) Organises and coordinates the courses to be attended in order to graduate and it submits them to the Faculty administration, acquiring the opinion of the other faculties during the annual programming.
 - b) Decides on practices related to the students' career (transfers, abridgements etc.);
 - c) Approves or rejects students' individual lecture lists;
 - d) Organises and disciplines tutoring activities;
 - e) Submits to the Dean of the Faculty of the administrative headquarters the commission for the final dissertation;
 - f) Submits to the Boards of the Faculties the courses to be assigned to tenured professors and to researchers, after consultation with the parts, respecting their freedom of teaching and their specific scientific competence;
 - g) Issues opinions on the activities of the supplementary courses assigned to researchers in the Master Degree Programme;
 - h) Submits the approval of the Regulations, or amendments thereto, to the Faculty of the administrative headquarters, acquired the binding opinion of the other Faculty;

- i) Appoints the commissions as referred to in the Art. 3.1 c), d) and e), as well as the person in charge of the Internships.

4. The President of the Council on curriculum is elected among the tenured professors of the Board as referred to in Paragraph 2, a), of the present article. The President holds office for three academic years and cannot be re-elected more than once consecutively.

The President of the Council on curriculum appoints a Vice president, chosen among the professors as referred to in Art. 3.2a), who shall substitute for the President in case of absence.

5. The President of the Council on curriculum:

- a) shall represent the Master Degree Programme;
- b) shall convene the meetings of the Board at least a week in advance and chair the Board;
- c) shall execute the resolutions of the Board as well as those of the Committee on teaching and the Dissertation committee.

6. The Committee on teaching is composed of the President of the Council on curriculum, who presides it, and a group of professors, one for each activated course, appointed by the Council on curriculum, based on a proposal of the President. Students' representatives, as referred to Paragraph 2, a) of the present article, shall participate in an advisory capacity to the meetings of the Committee on teaching.

7. The Committee on teaching:

- a) shall organise the teaching order of the Master Degree Programme;
- b) shall formulate proposals and opinions with regards to the evaluation of teaching;
- c) shall set up the administration of students' careers (transfers, abridgements, individual lecture lists etc.)
- d) shall propose the courses timetable;
- e) shall propose the contingent preparatory aspects of each course;
- f) shall coordinate the annual programming of oral and written exams.

8. The Dissertation committee is composed of a group of professors, one for each activated course, appointed by the Council on curriculum. A professor can be a member of both the Dissertation committee and the Committee on teaching.

9. The Dissertation committee:

- a) shall periodically require from teachers and researchers a list of topics which are available to be discussed in a dissertation, to be published on the webpage of the course.
- b) shall examine students' enquiries to be assigned to a supervisor, chosen among the teachers of the Master Degree Programme or among professors/researchers of Physics of the affiliated Universities, and it shall propose an assistant supervisor to be approved by the Council on curriculum;
- c) shall examine students' enquiries to write their dissertation on topics for which professors and researchers, as referred to in b), have not made themselves available; shall the enquiries be considered acceptable, given that the topic is of interest for the Programme, the Dissertation committee shall verify the availability of one or more external professors/researchers, upon previous agreement with them. Once their availability is confirmed, the external supervisor shall submit a dissertation outline, with a brief description of the objectives, techniques to be

used and expected results, proposing to the Council on curriculum its approval, together with the approval of an internal referent and an assistant supervisor.

d) shall submit the number of graduations sessions, and their dates.

10. The Committee on coordination is composed of both Deans of the Faculties and of the President of the Council on curriculum. It is presided by the Dean of the Faculty to which the President of the Council on curriculum does not belong.

11. The Committee on admissions assesses whether the students meet the minimum requirements to enrol. It is composed of three tenured professors/researchers, holds office for one year and cannot be re-elected more than once.

12. The Committee on coordination:

a) shall coordinate all relational aspects between the affiliated Universities;

b) shall submit strategic information concerning the Master Degree Programme;

c) shall appoint professors whose presence is mandatory to activate the Master Degree Programme in accordance with the law.

d) shall prepare a plan on the use of available finances, and submit it to the Faculty of the administrative headquarters, acquired the binding opinion of the other Faculty;

e) shall give final resolution in the event of disagreement on issues that require the approval of both faculties.

Art. 4 Structure

1. The Master Degree Programme is structured according to:

a) The Teaching order;

b) The list of courses and other activities related to it;

c) The annual lecture list.

2. The teaching order defines the structure of the Master Degree Programme, identifying the mode of application of the constraints defined by the class of the Master Degree Programme itself. It can be found in Attachment A.

3. The courses and activities related to it define for each curriculum:

a) the list of courses, with an indication of the SDS of reference, as well as other activities related to it;

b) the contingent modules which constitute the single course;

c) the ECTS of each course and of any other activity related to it;

d) the specific objectives and credits of each course and of any other activity related to it;

e) any preparatory aspect of each course

The list of courses and other activities related to it is specified in Attachments B1 and B2.

4. The annual lecture list defines how the Master Degree Program is organised, paying particular attention to the distribution of the courses in the two years. The lecture list is approved by the Council on curriculum, and it is defined each year by the Board of Faculty of the administrative headquarters, acquired the binding opinion of the other Faculty, according to the Teaching order and the list of courses and other

activities related to it, and approved by the deliberative bodies of the affiliated Universities in accordance with their Statutes.

The annual lecture list can be found in the Handbook.

Art. 5

Admission to the Master Degree Programme and verification of entrance requirements

1. To be admitted to the Master Degree Programme a Bachelor Degree or University Diploma, or other academic qualification obtained abroad and recognized as valid, is required. It is also required a thorough knowledge of mathematics and physics; in particular, it is required understanding and knowledge of:

- Mathematical Analysis, Geometry and Linear Algebra, Computers – no less than 15 ECTs;
- Classical Physics (Mechanics, Thermodynamics, Electromagnetism, Acoustics, Optics), Quantum Mechanics, Special Relativity, Condensed Matter Physics, Nuclear and Sub-nuclear Physics, Laboratory (execution of experiences and statistical data analysis) – no less than 30 ECTs

2. The Committee as referred to in Art. 3.11. shall verify entrance requirements. Applicants who meet the above-mentioned requirements must send to the committee (preferably via e-mail) their CV, including the syllabus and the title of their bachelor's thesis and final mark. All the documents must be sent following the instructions that can be found on the website of the University as specified in paragraph 4.

3. Through the CVs and, if necessary, an interview, the committee will assess the requirements to the admission to the Master Degree Programme. The applicants who own a Degree of Section 25 (Classe 25, former DM 509/99) or of Section L-30 (Classe L-30, former DM 270/04) with a final mark of at least 95/110 will enter the Master Degree Programme with no further assessment. To assess the necessary requirements to the admission to the Master Degree Programme, other applicants, who meet the basic requirements as referred to in paragraph 1, might be interviewed by the committee.

4. Terms and conditions of enrolment are defined by the teaching plan (*Calendario didattico*) of the Faculty of Mathematics, Physics and Natural Sciences of the administrative headquarters.

Art. 6

Graduation eligibility

1. To be eligible to graduate, each student must acquire 120 ECTs, in accordance to the legislation in force during the year of enrolment.

2. The duration of the Master Degree Programme is two years (Art. 8; former DM 270/04).

3. The Degree can be achieved even before the conclusion of the two-year period, provided that the student has acquired the 120 credits required by the curriculum.

Art. 7

Educational activities

1. The Master Degree Program includes educational activities which are classified as follows:

B: Characterising;
C: Related;
D: Optional;
E: In preparation of the final dissertation;
F: Activities for further linguistic knowledge, internships, computer skills, relational and telecommunication skills, or other skills that are useful to enter the world of work.

2. The ECTs assigned to each of the types above, as well as their objectives, are defined in attachment B2.

Art. 8

Curricula and courses, personalised lecture lists

1. Courses and other activities of the Master Degree Programme are organised as to provide, within the *curricula* of the Programme (available at <http://offf.miur.it>), different educational paths that offer a specialisation in different branches of Physics. *Curricula*, courses and their objectives and activities are described in attachment B2; any preparatory aspects are listed in attachment B1.
2. It is possible to submit an individual lecture list, provided the distribution of ECTs per SDS, as referred to in attachment B2. Submitting an individual lecture list is necessary in case of applicants who own a Degree of Section 25 (Classe 25, former DM 509/99) or of Section L-30 (Classe L-30, former DM 270/04) (see Art.3 Paragraph 3). Terms and conditions of the submission of individual lecture lists are defined by the teaching plan (*Calendario didattico*) of the Faculty of Mathematics, Physics and Natural Sciences of the administrative headquarters.
3. Lecture lists shall be approved by the Council on curriculum. Students who own a Degree of Section 25 (Classe 25, former DM 509/99) or of Section L-30 (Classe L-30, former DM 270/04), can refer to the Handbook, which provides for compulsory approved lecture lists.
4. Students can submit lecture lists with a number of ECTs higher than 120. The Diploma shall give indication of all ECTs, including supernumerary.
5. Students who intend to use mobility programmes shall submit a lecture list specifying which courses he/she will be attending in the guest University. Such lecture lists shall be approved, before the student leaves, by the Council on curriculum which will verify its compatibility with the courses provided for in the Regulations. ECTs shall be earned and marks registered (out of 30) after the conclusion of the mobility programme, by the Secretary Office for Students, after being approved by the council on curriculum.

Art. 9

Teaching (including off-site teaching), types of examinations and other procedures of assessment of the students' advancement

1. Each European University Credit (ECTs) implies 25-hour work by the student, divided in lectures (1/3) and autonomous study (2/3). As far as laboratories are concerned, the work is divided equally.
2. Teaching can be carried out as follows:
 - Lectures in class, which can imply the use of multimedia;
 - In-class and in-computer lab numerical exercises;
 - individual or group laboratory experiments;

- Lectures and/or experiments in research facilities outside of the University, or stays in other Italian or foreign Universities, within the framework of international agreements;
- Some lectures might be taught by videoconference, according to the Handbook.

Lectures might be taught entirely or partly in English; in case of the presence of students from the International Programme of Study in Physics (*Programma Internazionale di Studio in Fisica*) lectures will be taught in English. Exams might be entirely or partly in English.

3. The internship aims at learning work techniques to the purpose of the dissertation, and it is usually carried out under the supervision of the supervisor or other professor appointed by the Council on curriculum. At the end of the internship the student shall submit the work done during a public seminar organised by the person in charge of the Internships at the Department of Physics of the administrative headquarters.

4. All activities that allow the acquisition of ECTS are accounted for in accordance with the AR, by committees that include the head of the educational activity. Marks are expressed out of thirty (*cum laude*), or as "approved" or "not approved" in the case of Internships.

5. Exams may include a written/practical test, an oral exam or both. There are three exam sessions in accordance with Art. 19 of the AR. The oral test shall be taken in the same session as the written exam and during examination sessions provided for each year in the Handbook, unless otherwise decided by the head of the educational activity. During the oral exam, the student has the right to withdraw, but in this case the examination committee may determine that the written test shall be repeated for admission to oral examination.

Art. 10 Attainment of the Degree

1. The Diploma of Science in Physics is attained after academic defence before a Board of Examiners composed of at least five members, appointed by the competent educational facilities.

2. The dissertation is a written document that presents the results of an original study on a topic of research, framing them within the specified area and attaching an adequate bibliography. The study may be experimental, theoretical, computational.

3. Research in the purpose of the dissertation shall be carried out under the supervision of a Supervisor, usually chosen among the professors of the Master Degree Programme or among professors/researchers of Physics of the affiliated Universities as referred to in Art 3.9 b)-c). The dissertation shall be written in Italian or in English. If written in English it will have to include, written in Italian: a frontispiece, including the Title of the dissertation and the names of the supervisor and assistant supervisor, and an abstract. Students must submit their proposals at least six months before the graduation session; if in the case specified in Art. 3.9 c) the proposal must be submitted 8 months in advance.

4. The graduation mark is based on the evaluation of the curriculum of studies, content of the thesis, its defence and additional elements aimed at encouraging passing the exams on the time established by the teaching order. The overall grade is obtained from the weighted average (by their ECTS) of the grades obtained during the two-year Master's Degree, expressed out of 110. To this are added three points if all the exams in the two years were passed by 31 July of the second year, a fifth of a point for each *cum laude* with a maximum of 2 points, up to six points for the thesis, the presentation and defence. The attribution of honours, if the candidate has achieved the highest marks, require unanimity of the Board of Examiners.

Art. 11
On compulsory attendance

1. Attendance is compulsory in laboratory classes;
2. The Committee on teaching determines case by case the replacement activities of any compulsory attendance for students who work or students with disabilities, with the possible support of additional educational supports for students not attending or not engaged full-time.

Art. 12
Transfer students from other Programmes

1. Requests for transfer to the Master Degree Programme in Physics are discussed and accepted or rejected by the Committee on curriculum, acting on a proposal of the Committee on teaching. The person concerned may be heard. The deadline for the submission of applications for transfer are set by the Academic Calendar of the Faculty of Mathematical, Physical and Natural Sciences of the administrative headquarters.
2. Students seeking transfer to the Programme must submit individual lecture list indicating the activities for which recognition is required.
3. The recognition of ECTS earned at another Programme of the University or in other University courses, as well as of knowledge and skills certified, shall be by resolution of the Committee on curriculum, subject to verification by the Committee on teaching of the content of the activities carried out and their equivalence and compatibility with the objectives of the Programme.

Art. 13
Distribution of activities between the affiliated Universities

1. Activities aimed at achieving the Diploma in science and divided according to the provisions of Attachment B2 and the Handbook will be conducted in the following locations:
 - a) First-year activities will be conducted in Trieste;
 - b) Second-year activities shall be conducted in both Trieste and Udine as far as Nuclear and Sub-Nuclear Physics is concerned; other Programmes shall be conducted in Trieste.

Art. 14
Transitional and final provisions

1. Amendments to the Regulations shall come into force after the approval of the Boards of Faculties of the affiliated Universities for all enrolled students.
2. The Regulation shall enter into force on the day following the issuance of a Dean's Decree.