

Addenda to the Model Teaching and Examination Regulations Master's degree 2009-2010, specific for the Top Master Programme in Nanoscience

General stipulations

Article 1.5 reads: The Programme is taught in English.

The articles 2.2, 4.1, 4.2 and 4.3 are void.

Article 4.4 is renumbered 4.1.

Article 4.5 is renumbered 4.2.

Article 4.6 is void.

A new article 4.3 is inserted describing the special admissions procedure for the Top Master Programme in Nanoscience. See Appendix E below.

In the Model Teaching and Examination Regulations Master's degree 2009-2010, for Appendix C, read Appendix B; for Appendix D, read Appendix C; for Appendix E, read Appendix D.

Appendix A. Objectives of the Programme

The Top Master Programme in Nanoscience aims to provide the student with the knowledge, skills, and insights pertaining to the field of nanoscience that will enable him or her to seek employment or apply for a continued training as researcher.

Appendix B. Content of the degree programme

The exams for all courses of the Top Master programme are in written form, unless agreed to otherwise by the teacher and the student.

The compulsory part of the Top Master Programme in Nanoscience consists of:

- a. **Guided self-study** (6 ECTS) intended to enable students to follow the Core Curriculum. Topics from the following list will be assigned on an individual basis by the Chair of the Board of Examiners:

- Solid-state physics
- Quantum theory
- Organic chemistry
- Inorganic chemistry
- Mathematics

For each assigned topic, the tutor associated with the topic will determine whether the student has passed the requirements.

- b. **Core Curriculum** (30 ECTS)

The Core Curriculum defines to a large extent the character of the Programme. It consist of the following three modules:

Preparation of nanomaterials and devices (8 ECTS)

Characterization of nanomaterials (9 ECTS)

Fundamental and functional properties of nanomaterials (13 ECTS)

These modules will be examined in two or three parts each. The mark obtained for each part has to be at least 6. If a student repeats an exam for a part, the marks obtained at each exam for that part will be averaged.

- c. **Scientific paper** (6 ECTS)

The student will write a scientific paper on a topic of his or her choice. This choice needs the approval of the mentor and of the coordinator of this component of the programme.

d. Small research project (13 ECTS)

The student will carry out a small research project around an already defined problem. All students of a given cohort will jointly organize a symposium in which they will present their individual small research projects.

e. MSc thesis project (45 ECTS)

The student will carry out a substantial research project.

f. PhD proposal (6 ECTS)

The student will write a proposal for a PhD project, in the form required by Dutch funding agencies like FOM. It is not necessary that the student actually intends to carry out this project himself or herself.

The scientific paper (sub c) and the small research project (sub d) cannot be carried out in the same research group.

Appendix C. Optional modules

The student will spend at least 14 ECTS on electives, on topics related to nanoscience but not sufficiently covered by the Core Curriculum. The choice of electives needs approval by the Board of Examiners.

The electives can be chosen from the following list with automatic approval:

- Reaction mechanisms (3 ECTS)
- Structure determination using spectroscopic methods (3 ECTS)
- Computational physics (5 ECTS)
- Non-linear optics (5 ECTS)
- Many-particle physics and quantum theory of solids (5 ECTS)
- Solid-state physics II (5 ECTS)
- Mesoscopic physics (5 ECTS)
- Micromechanics (3 ECTS)
- Computational electronic structure theory (4 ECTS)
- Organic chemistry: method and strategy 1 (5 ECTS)
- Stereochemistry (3 ECTS)
- Organometal chemistry (7 ECTS)
- Coordination chemistry (3 ECTS)
- Polymers at surfaces and interfaces (5 ECTS)
- Polymer physics (5 ECTS)
- Advanced polymer chemistry (3 ECTS)
- Laser physics (4 ECTS)

Please note that the ECTS points assigned to these courses as electives for the Top Master Programme in Nanoscience are lower than the ECTS points assigned to these same courses when part of a regular master programme.

It is also possible to choose modules not included in this list as electives, subject to approval by the Board of Examiners. In such case, the Board of Examiners will determine the study load in ECTS associated with each elective not from the list above.

Appendix D. Entry requirements and the compulsory order of examination

The Guided Self-study has to be completed prior to the start of the Core Curriculum.

The Core Curriculum has to be completed prior to the start of the electives.

The small research project and the scientific paper have to be completed prior to the start of the MSc thesis project.

Appendix E. Admission procedure

1. Students in possession of an admission permit can be admitted to the programme.
2. Students who meet the requirements are provided with an admission permit by the Admission Board.
3. An admission permit is only valid for the academic year following the academic year in which the permit is granted.
4. There may be other conditions attached to the admission permit. The requirements must be met before the programme has started.
5. The admission requirements comprise:
 - a bachelor's degree in chemistry, physics, materials science, or other field deemed relevant by the Admissions Board;
 - sufficient knowledge of the English language;
 - sufficient knowledge of the relevant sciences;
 - a suitable attitude, motivation and talent to follow the programme.
6. The Board of Examiners establishes an Admissions Board that judges the student's fulfilment of the requirements. This Board consists of three members of the Board of Examiners, completed by a university employee. One of the members is appointed as chairperson.
7. The decisions of the Admissions Board can be appealed to at the Board of Appeal for Examinations.
8. Students apply to the admission procedure by sending in the following documents:
 - a completed application form;
 - a complete curriculum vitae;
 - a survey of the study results attained in academic courses so far;
 - a letter in which the student states why s/he wants to follow this programme in particular, what his/her expectations and ambitions are;
 - (if desired) results of former research projects, like reports or articles;

- the names of three scientists willing to provide personal information on the applicant;
- (if desired) other documents that the student thinks useful in furthering his/her application.

These documents are to be sent to the Faculty of Mathematics and Natural Sciences by 1 February for non-EEA students and by 1 June for EEA students preceding the start of the programme.

9. Sufficient knowledge of the English language can be proved by

- Cambridge Certificate of Proficiency in English (A, B or C);
- Cambridge Certificate in Advanced English (A, B or C);
- an overall score of 6.5 or higher in the International English Language Testing System (Academic version);
- a score of at least 580 on the paper-based form of the Test of English as a Foreign Language;
- a score of at least 237 on the computer-based form of the Test of English as a Foreign Language;
- a score of at least 92 on the internet-based form of the Test of English as a Foreign Language.

An original certificate of the test, not older than two years, needs to be sent in. The Admissions Board may accept other proofs of knowledge of the English language that guarantee a comparable level of knowledge of English.