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REVISED program

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PRESIDENT'S APPROVAL
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NATIONAL INSTITUTE OF PHYSICS
COLLEGE OF SCIENCE, U.P. DILIMAN

THE REVISED M.S. (PHYSICS) PROGRAM

1. OBJECTIVES OF THE PROGRAM

The Program leading to the degree of Master of Science in Physics aims to provide students with an adequate graduate education in physics that will prepare them for scientific careers in academic and/or research institutions.

2. ADMINISTRATION OF THE PROGRAM

The M.S. (Physics) Program shall be administered by the Graduate Committee of the National Institute of Physics (NIP) in accordance with the College of Science Guidelines for Graduate Programs. The NIP Graduate Committee shall be composed of all regular faculty members of the NIP who possess a Ph.D. degree or its equivalent in pure or applied physics and shall be chaired by the NIP Director.

3. ADMISSION INTO THE PROGRAM

3.1 Admission into the M.S. (Physics) Program shall require (1) a bachelor's degree in physics or a closely related discipline from a recognized institution of higher learning; (2) an adequate preparation in physics at the undergraduate level; and (3) a high degree of intellectual capacity and aptitude for graduate study in physics.

3.2 Each application for admission into the M.S. (Physics) Program must be accomplished in the official College application form and accompanied by official transcripts of records, written recommendations from two (2) former professors or experts in the field, and the officially prescribed application fee.

3.3 All applications shall be submitted to the processed by the College Graduate Office, evaluated by the NIP Graduate Committee, and endorsed by the latter to the Dean for official action.

4. GENERAL REQUIREMENTS FOR THE M.S. (PHYSICS) DEGREE

The M.S. (Physics) degree may be obtained through either of the following two (2) options:

4.1 Thesis Option

To qualify for the M.S. (Physics) degree under the Thesis Option, a student must satisfy the following requirements: (a) complete a minimum of twenty-four (24) units of formal graduate courses in physics, as specified below; (b) maintain a Cumulative Weighted Average Grade (CWAG) of "2.0" or better in his/her graduate courses at the end of each academic year; (c) complete two (2) units of graduate colloquium and one (1) unit of graduate seminar in physics; (d) fulfill three (3) units of undergraduate physics teaching; (e) submit a Masteral Thesis based on supervised research in experimental or theoretical physics; (f) successfully defend the Masteral Thesis in a Masteral Examination and (g) submit at least six (6) bound and certified copies of the approved Masteral Thesis.

4.2 Non-Thesis Option

To qualify for the M.S. (Physics) degree under the Non-Thesis Option, a student must satisfy the following requirements: (a) complete a minimum of thirty-three (33) units of formal graduate courses in physics; (b) maintain a Cumulative Weighted Average Grade (CWAG) of "2.0" or better in his/her graduate courses at the end of each academic year; (c) complete two (2) units of graduate colloquium and one (1) unit of graduate seminar in physics; (d) fulfill three (3) units of undergraduate physics teaching; (e) pass the Preliminary Examination based on the graduate core courses in physics; and (f) pass the Qualifying Examination.

5. THE PROGRAM ADVISER AND PROGRAM OF STUDY

5.1 The Program Adviser

Each student admitted into the M.S. (Physics) Program shall be assigned a Program Adviser to be designated by the NIP Graduate Committee. The Program Adviser shall advise, guide, and evaluate the student until the latter obtains a Thesis Adviser (in the case of a student in the Thesis Option) or obtains the M.S. (Physics) degree (in the case of a student in the Non-Thesis Option).

5.2 Placement Examination

A student admitted into the M.S. (Physics) Program may be required by the NIP Graduate Committee to take a Placement Examination before the start of the First Semester for the purpose of assessing his/her undergraduate preparation in physics. A student who does not perform satisfactorily in the Placement Examination or who has a deficient undergraduate preparation in physics may be required by the Program Adviser to complete the appropriate undergraduate remedial courses in the NIP's B.S. (Physics) Program.

5.3 The Program of Study

In consultation with the student and on the basis of his/her undergraduate preparation in physics or performance in the Placement Examination, a Program of Study shall be designed by the Program Adviser and submitted to the College Graduate Office through the NIP Graduate Committee within the first semester of the student's initial year in the Program. Subsequent revisions in the Program of Study must be approved by the Program Adviser and reported as soon as possible to the College Graduate Office through the NIP Graduate Committee.

5.4 Semestral Study Load

The normal study load per semester shall be nine (9) to twelve (12) units of formal courses.

6. COURSE REQUIREMENTS AND TRANSFER OF CREDITS

6.1 Course Requirements

All students in the M.S. (Physics) Program, whether under the Thesis or Non-Thesis Option, shall be required to complete the following minimum number of graduate courses:

6.1.1 Core Courses: Eighteen (18) units consisting of Physics 221 (Classical Mechanics I), Physics 231-232 (Classical Electrodynamics I-II), Physics 241-242 (Quantum Mechanics I-II), and Physics 251 (Statistical Mechanics I);

6.1.2 Elective Courses: Six (6) units, (for students under the Thesis Option) and fifteen (15) units (for students under the Non-Thesis-Option), consisting of graduate electives in physics or in a closely related field which are to be chosen with the advice and consent of the Program Adviser.

6.2 Transfer of Credits

Except in cases of special academic agreements between the University and external academic institutions, a maximum of nine (9) units of graduate courses earned in another university may be credited to the M.S. (Physics) course requirements, subject to the recommendation of the Program Adviser and the approval of the NIP Graduate Committee.

7. GRADE REQUIREMENT

7.1 Grading System

The following numerical grades shall normally be used in graduate physics courses: "1.0" (Excellent); "1.25"; "1.5" (Very Good); "1.75"; "2.0" (Good); "2.25"; "2.5" (Satisfactory); "2.75"; "3.0" (Passed); "4.0" (Conditional Failure); "INC." (Incomplete); and "5.0" (Failed). For special physics courses, however, the following non-numerical grades may be given: "P" (Passed), "R" (Repeat), "S" (Satisfactory), or "U" (Unsatisfactory).

7.2 Cumulative Weighted Average Grade

To remain in good standing in the M.S. (Physics) Program a student must maintain a Cumulative Weighted Average Grade (CWAG) of "2.0" or better in his/her course work at the end of each academic year until the completion of his/her program of study. The student's CWAG shall be computed by his/her Program Adviser at the end of each academic year and reported by the NIP Graduate Committee to the College Graduate Office.

7.3 Failure to Satisfy the Grade Requirement

A student who fails to satisfy the M.S. grade requirement at the end of the academic year shall be disqualified from the M.S. (Physics) Program unless the NIP Graduate Committee decides, on justifiable grounds and upon the recommendation of the student's Program Adviser, to put him/her on probation for a period of one (1) to two (2) semesters. Failure to obtain the minimum CWAG after the probation period shall automatically disqualify the student from the M.S. (Physics) Program.

8. COLLOQUIUM, SEMINAR, AND TEACHING REQUIREMENTS

8.1 Graduate Colloquia in Physics

Each student in the M.S. (Physics) Program shall also be required to complete at least two (2) units of Physics 297 (Graduate Colloquium) through regular attendance in the NIP colloquia. This requirement is intended to acquaint the student with current international advances in physics as well as ongoing research projects in the NIP.

8.2 Graduate Seminar in Physics

In addition to the formal course requirements, each student in the M.S. (Physics) Program shall be required to complete one (1) unit of Physics 298 (Graduate Seminar).

8.3 Teaching Requirement

Each student in the M.S. (Physics) Program, who has had no previous experience in physics teaching, must also satisfactorily fulfill three (3) units of undergraduate physics teaching in the NIP.

9. THE MASTERAL THESIS

9.1 The Nature of the Masteral Thesis

Each student in the M.S. (Physics) Thesis Option shall be required to submit a Masteral Thesis which must be a scholarly work embodying a supervised experimental and/or theoretical research by the student and presenting a worthwhile contribution to physics in scholarly manner.

9.2 The Thesis Adviser and Reader

After a student in the M.S. (Physics) Thesis Option finds a suitable Thesis Adviser, he/she will be assigned a Thesis Reader by the NIP Graduate Committee. In special cases requiring joint advising, a Thesis Co-Adviser may be assigned to the student in addition to a Thesis Reader.

If either the Thesis Adviser or Co-Adviser belongs to an external institution, the corresponding Co-Adviser or Adviser must be a regular faculty member of the NIP. The Thesis Reader may also belong to an external institution.

The Thesis Adviser and the Thesis Reader (as well as the Co-Adviser, if any) shall be formally appointed by the Dean upon the recommendation of the NIP Graduate Committee. They shall be responsible for (1) advising the student in the preparation of his/her Thesis Proposal, (2) guiding the supervising his/her thesis research, and (3) endorsing his/her Master's Thesis for defense in a Masteral Examination.

9.3 The Thesis Proposal

Before the thesis research can be formally started, the student must first prepare a written thesis proposal with the advice of his/her Thesis Adviser and Thesis Reader (as well as Thesis Co-Adviser, if any) and submit it to the NIP Graduate Committee for approval. Upon approval of his/her Thesis Proposal, the student may then proceed to carry out his/her thesis research.

10. DEFENSE OF THE MASTER'S THESIS

10.1 The Master's Examination Panel

Upon completion of the master's thesis and its endorsement by the Thesis Adviser and Thesis Reader (as well as a Thesis Co-Adviser, if any) to the NIP Graduate Committee, the latter shall recommend to the Dean the formal appointment of two (2) Thesis Examiners who, together with the Thesis Adviser and Thesis Reader (plus the Thesis Co-Adviser, if any) shall constitute the Master's Examination Panel of four (4) or five (5) members. The Thesis Reader or one of the Thesis Examiners shall be designated by the Thesis Adviser to chair the Master's Examination.

10.2 Administration of the Master's Examination

The Master's Examination, in which the student must defend his/her thesis before the Master's Examination Panel, may be held within the College at any mutually convenient time upon the recommendation of the Master's Examination Panel, the endorsement of the NIP Graduate Committee, and the formal authorization of the Dean.

The Master's Examination may be held only if (a) the student has already satisfied the colloquium, seminar, and teaching requirements; (b) the thesis manuscript has been received by each member of the Master's Examination Panel at least one (1) month beforehand; and (c) at least three (3) out of four (4) or four (4) out of five (5) members of the Master's Examination Panel are present.

The schedule and place of the Master's Examination shall be officially authorized by the Dean and publicized throught the College by the NIP Graduate Committee at least two (2) weeks beforehand. The schedule of the Master's Examination may be changed only upon the recommendation of the Master's Examination Panel, the endorsement of the NIP Graduate Committee, and the formal authorization of the Dean.

The Master's Examination shall be a public oral examination lasting no less than two (2) hours and no longer than four (4) hours. In accordance with the examination guidelines of the NIP Graduate Committee, questions may be asked by anybody during the examination, but the evaluation and rating of the student's thesis defense shall be done by the Master's Examination Panel in a closed-door meeting to be held immediately after the Master's Examination.

10.3 Rating of the Master's Examination

The Master's Examination may be given either of the following ratings: "Passed", if the thesis defense is deemed acceptable; "Provisionally Passed", if the thesis defense is deemed acceptable subject to certain minor revisions of the thesis in form or content; or "Failed", if the thesis defense is deemed unacceptable.

Acceptance of the thesis defense by at least three (3) out of four (4) or four (4) out of five (5) members of the Master's Examination Panel shall merit the rating of "Passed", while rejection of the thesis defense by at least two (2) Panel members shall incur the rating of "Failed". Any combination of conditional acceptance and/or rejection of the thesis defense in between these two extremes shall result in a rating of "Provisionally Passed". A vote of rejection by a Panel member must be explained in writing.

The result of the Master's Examination must be reported by the Masteral Examination Panel to the College Graduate Office through the NIP Graduate Committee within the first working day after the examination.

10.4 Passing or Failing of the Master's Examination

If the student gets a rating of "Passed" in the Master's Examination, his/her Master's Thesis is considered approved.

If the student gets a rating of "Provisionally Passed" in the Masteral Examination, he/she must comply with the conditions imposed by the Master's Examination Panel within six (6) months after the examination in order to change his/her rating to "Passed". Compliance with these conditions must be certified by the Master's Examination Panel and reported to the NIP Graduate Committee and the College Graduate Office before the masteral thesis can be officially endorsed for acceptance. Failure to comply with these conditions within the six-month period shall entail conversion of the rating of "Provisionally Passed" to a rating of "Failed".

If the student gets a rating of "Failed" in the Masteral Examination, he/she may submit himself/herself to a second Master's Examination not earlier than three (3) months nor later than twelve (12) months after the rating of "Failed" is incurred in the first examination. A rating of "Failed" in the second Masteral Examination shall disqualify the student from the M.S. (Physics) Program under the Thesis Option.

11. THE PRELIMINARY EXAMINATION

11.1 Nature of the Preliminary Examination

The Preliminary Examination is a written examination that has to be taken by a student in the M.S. (Physics) Non-Thesis Option within one (1) year after completing the core courses in his/her program of study. This examination which will normally be scheduled during the summer session of each academic year, is intended to test the student's ability to integrate and apply the overall knowledge of physics that he/she has gained from the core courses. The Preliminary Examination for students in the M.S. (Physics) Non-Thesis Option shall be the same as the Preliminary Examination for students in the Ph.D. (Physics) Program but the minimum passing grade for the latter shall be higher than that for the former.

11.2 Administration of the Preliminary Examination

The Preliminary Examination in the M.S. (Physics) Non-Thesis Option shall be scheduled, administered, graded, and evaluated by the NIP Graduate Committee or by a special subcommittee thereof. Copies and results of the Preliminary Examination must be submitted by the NIP Graduate Committee to the College Graduate Office within one (1) month after the last day of the examination.

11.3 Rating of the Preliminary Examination

A student's performance in the Preliminary Examination shall be rated either "Passed" or "Failed" on the basis of M.S. (Physics) standards set by the NIP Graduate Committee. A student who fails the Preliminary Examination shall be allowed to retake the examination within one (1) year after the first examination. Failure of a student in the second Preliminary Examination shall disqualify him/her from the M.S. (Physics) Program.

12. THE QUALIFYING EXAMINATION

12.1 Nature of the Qualifying Examination

The Qualifying Examination is an oral examination that must be taken by a student in the M.S. (Physics) Non-Thesis Option after he/she has passed the Preliminary Examination and completed all the course requirements and other requirements for the M.S. (Physics) degree. In this examination the student is required to give a seminar on a topic covering a recent development in physics and is examined on his/her (a) grasp of this topic as well as related topics and (b) mastery of the basic principles and methods of physics. The Candidacy Examination for the Ph.D. (Physics) degree may serve as the Qualifying Examination for the M.S. (Physics) degree.

12.2 Administration of the Qualifying Examination

Upon the formal request of the student and the recommendation of his/her Program Adviser, the NIP Graduate Committee shall designate a special examination panel of at least three (3) members who shall schedule, conduct, and evaluate the Qualifying Examination for the student. This oral examination shall last from two (2) to four (4) hours.

12.3 Rating of the Qualifying Examination

The Qualifying Examination shall be rated either "Passed" or "Failed" by a simple majority vote of the special examination panel. Its result must be officially reported by the special examination panel to the College Graduate Office through the NIP Graduate Committee within the first working day after the examination.

If the student passes the Qualifying Examination, he/she qualifies for the M.S. (Physics) degree under the Non-Thesis Option.

If the student fails the Qualifying Examination, he/she will be allowed to take a second Qualifying Examination within one (1) year after the first examination. Failure in the second Qualifying Examination shall disqualify the student from the M.S. (Physics) Program under the Non-Thesis Option.

13. RESIDENCE RULES

13.1 One Year Residence Before Graduation

The student must be officially enrolled in the College for at least one (1) academic year prior to the conferment of the M.S. (Physics) degree.

13.2 Maximum Residence Rule

As a general rule, the time limit for the completion of all M.S. (Physics) degree requirements shall be no more than five (5) years. Residence shall start from the time the student enrolls in a graduate course in the M.S. (Physics) Program and shall include all leaves of absence from the Program.

13.3 Extensions of Residence

In very special cases, extensions of residence beyond the above maximum residence period may be granted, for a period not exceeding one (1) calendar year, by the Chancellor upon the endorsement of the Dean and the recommendation of the NIP Graduate Committee.

13.4 Non-Compliance with Maximum Residence Rule

A student who fails to complete all the requirements for the M.S. (Physics) degree within the maximum residence period and any approved extension thereof shall be disqualified from the M.S. (Physics) Program.

13.5 Absence Without Leave

Any student who goes on absence without leave (AWOL) from the M.S. (Physics) Program shall be automatically dropped from the Program.

14. TRANSFER FROM ONE M.S. OPTION TO ANOTHER

Any student in the M.S. (Physics) Program may be allowed to transfer from one M.S. (Physics) Option to the other subject to the approval of the NIP Graduate Committee. Such a change in M.S. (Physics) Option must be officially reported by the NIP Graduate Committee to the College Graduate Office as soon as possible.

15. GRADUATION FROM THE M.S. (PHYSICS) PROGRAM

15.1 Application for Graduation

After completion of all the requirements for the M.S. (Physics) degree under either Option the student must submit to the College Graduate Office an application for graduation, accompanied by a recommendation from the NIP Graduate Committee.

15.2 Submission of Bound Thesis

In the case of a student under the Thesis Option, he/she must submit to the College Graduate Office six (6) bound copies of the approved masteral thesis as a prerequisite for graduation. The bound copies must contain the official certificate of the thesis' approval by the Thesis Adviser (and Thesis Co-Adviser, if any)

and the Thesis Reader, its endorsement by the NIP Director, and its acceptance by the Dean.

15.3 Conferment of the M.S. (Physics) Degree

After the graduation of the student is recommended by the College of Science, endorsed by the University Council, and approved by the Board of Regents, he/she shall be officially conferred the M.S. (Physics) degree by the University.