University of Wisconsin-Madison

The Department of Physics of National Taiwan Normal University (NTNU) and the Department of Physics of the University of Wisconsin-Madison (UW), have agreed to facilitate collaboration between UW's Master of Science in Physics-Quantum Computing (MSPQC) and NTNU's Master of Science in Physics. The collaboration provides NTNU students with the opportunity to take courses in-residence at both UW and NTNU. NTNU students completing all requirements at each university will receive masters' degrees in Physics from both UW and NTNU.

Admissions/Selection of Students

1. NTNU will advertise the MSPQC program to students. Applicants to the MSPQC program must:
    (1) Have completed two semesters of NTNU master courses in physics.
    (2) Have completed Bachelor of Science in Physics degree.
    (3) Provide TOEFL or IELTS scores for non-native English speakers, qualified NTNU applicants will have achieved one of the following score minimums: TOEFL 92 (iBT), TOEFL 580 (PBT) MELAB 82 or IELTS 7.0.
2. NTNU-admitted graduate students that intend to acquire both master's degrees will complete graduate courses in-residence at NTNU followed by two to three semesters of graduate courses at UW.
3. After coursework in-residence at UW, qualified students will be allowed to return to the Master's Programs of NTNU as fulltime degree-seeking graduate students.

Admissions Committees at UW will screen NTNU applicants and determine admissions without imposing a quota. UW will retain the right to decline admission to NTNU applicants in accordance with their own admissions rules and standards.

Degree Requirements

1. UW–Madison MSPQC Program
    (1) 30 credits in total with a minimum of 21 credits taken at UW.
    (2) Students may seek to have up to 9 credits counted toward their UW MSPQC program degree requirements and, if counted, would be able to graduate from UW after two semesters of coursework at UW.
    (3) UW is responsible for its own degree requirements.
2. NTNU MS in Physics Program
    (1) 24 credits in total and pass the thesis defense.
    (2) As long as the course content is consistent, 9 credits earned at UW may

be transferred to NTNU.

NTNU graduate students admitted to this collaboration program must fulfill the requirements of both the NTNU MS in Physics and UW-Madison MSPQC to receive double master's degrees.

Courses and Enrollment

1. Fulltime Enrollment: While in-residence at UW, students must enroll fulltime each semester of study, in accordance with U.S. government regulations. Suspension and withdrawal shall be handled in accordance with the regulations of NTNU and UW.
2. Degree Course Selection: UW is responsible for designing its courses, determining its course offerings, and determining courses required for the MSPQC degree; UW will convene a committee responsible for approving courses eligible towards the MSPQ degree. If UW requires changes to this list of courses during the term of this Agreement, it will notify NTNU. Any changes must be agreed to in writing by both universities.
3. Appendix: The attached list(s) represents the agreed-upon courses and a typical coursework plan as of the date of this Agreement.

Advising

Each university will be responsible for providing adequate academic advising to enrolled students.

Tuition

Each university is responsible for setting and collecting tuition for credits taken through their own university. If either university experiences a change in tuition, the other university will be notified in writing of that expected change in tuition at least 6 months prior to the tuition change. The standard for tuition fees is handled according to the announcements made by both universities regarding international students.

Finances

Students will be responsible for tuition and fees at each university. While in-residence at UW, students will not be eligible for TA/PA/RA positions that provide tuition remission. No refund of tuition or fees will be made if a student is unable to complete her/his courses or withdraws before the end of the semester underway.

Housing, Food, Travel

Students will be financially responsible for their own housing, food, and travel. Each university will assist participants in locating housing to the extent feasible during their in-residence period.

Insurance/Medical Costs

During the in-residence period at UW, students must purchase the mandatory UW health insurance plan for international students, entitling them to use clinical services as UW-enrolled degree-seeking students.

Appendix: Suggested coursework for the dual degree program

Year 1

- Fall at NTNU:
  - PHC0011 (Quantum Mechanics (I), 3 credits, required)
  - PHC0013(Classical Electrodynamics (I), 3 credits, required)
  - PHC0023 (Solid State Physics (I), 3 credits, required)
  - PHC0041 (Seminar (I), 1 credit, required)
- Spring at NTNU:
  - PHC0012 (Quantum Mechanics (II), 3 credits, required)
  - PHC0041 (Seminar (II), 1 credit, required)

Year 2

- Fall Term at UW:
  - Physics 709 (Introduction to Quantum Computing, 3 credits, required)
  - Physics 448 (Atomic and Quantum Physics, 1st semester, 3 credits)
  - Physics 701 (Introductory Seminars, 1 credit, required)
- Spring Term at UW:
  - Physics 779 (Advanced Quantum Computing, 3 credits, required)
  - Physics 449 (Atomic and Quantum Physics, 2nd semester, 3 credits)
  - Physics 799 (Independent Study, 2 credits)
- Summer Term at UW
  - Physics 707 (Quantum Computing Laboratory, 4 credits, required)
  - Physics 799 (Independent Study, 2 credits)

NOTE: Physics 448, 449, and 799 may be replaced by other electives