Information and Degree Requirements for Program in Biomedical Artificial Intelligence at National Tsing Hua University

I. Eligibility: Applicable to Biomedical Artificial Intelligence (BAI) Program PhD students enrolling after the academic year of 2021.

II. Advising & Mentoring:

1. Dual mentorship (primary advisor/co-mentoring advisor): Students need to choose two advisors, one from bio-medical field, and the other from artificial intelligence, big data analysis, bioinformatics or algorithm development fields. The advisors should be reviewed and approved by the BAI program executive committee. One of the two advisors should be the primary academic advisor and the other is the co-mentoring advisor. The co-mentoring advisor can be from on or off campus and qualified for the status defined in the Article 6 of National Tsing Hua University Doctoral Degree Exam Statutes regulations.

2. First-year PhD students must rotate in at least two labs and turn in learning reports at the end of each rotation. Each rotation must be at least 3.5 months in length and should not exceed one semester.

3. PhD students must choose a primary advisor and a co-mentoring advisor before the first academic year ends.

III. Degree Requirements:

1. Period of study: 2 to 7 years. On-the-job graduate students may extend the period of study to up to 9 years.

2. Course Requirements: Student should complete a minimum of 24 credits (dissertation research credits are not included), including:

   i. At least 16 credits Required Courses must be taken in English.

      (1) Science (one semester), 3 credits

      (2) Communication of Research (one semester), 1 credit. When the BAI Program is not offering this course, students are allowed to take a related course from another department or program at NTHU. Approved courses will be listed on the Program webpage every semester.

      (3) Colloquium (four semesters), 1 credit each semester

      (4) Introduction of Statistics and Machine Learning (I)(one semester), 3 credits

       (5) Introduction of Statistics and Machine Learning (II)(one semester), 3 credits.

       (6) Lab Rotation (I)(one semester), 1 credit.

       (7) Lab Rotation (II)(one semester), 1 credit.

       (8) Registered Dissertation Research credits are extra and not included in the minimum 24 credits.

       (9) Upon obtaining the primary advisor's approval and send to the Program Committee for verification, students may take Colloquium courses offered by other departments/programs.

  ii.   Students of direct pursuit of PhD degree should take a minimum of 30 credits with professional courses no less than 24 credits. Professional courses must be approved by the Program committee in advance.

  iii.   Credit Transfer: Any graduate student that meets the "Regulations Governing Student Credit Transfer of National Tsing Hua University"

(本校學生抵免學分辦法) criteria may apply for credit transfer.

       (1) The credits applied for credit transfer must be Master or PhD level courses in the applicant's original school, received a grade of 70 or above, and not already counted as graduation credits.

       (2) In order to transfer credits for BAI Program courses, it is limited to professional courses offered within five years. Communication of Research, Colloquium and elective courses no more than 13 credits. After obtaining approval from the primary advisor and the director of the BAI Program, the credits may be transferred. If there is any dispute, it will be reviewed by the BAI Program committee members.

       (3) Those students who are approved to study abroad, exchange, internship, or pursue a joint/dual degree, can provide relevant information to be confirmed by the BAI Program Office in advance before taking courses, not subject to the aforementioned 13-credit limit

3. Graduation Requirements:
  i.   Completion of course requirements, research progress review, qualification exams, dissertation proposal and successful pass of the dissertation oral defense.

  ii.   PhD candidate qualification examination: After entering the program, students must pass the qualification examination within 3 years (voluntary suspension is not included). The requirements of the

qualification exam are listed below. Meet one of the requirements to pass the qualification exam.

(1) Take Introduction of Statistics and Machine Learning (I) or Introduction of Statistics and Machine Learning (II) as qualification exam course with a pass and within top 20% in class e.g., if there are 4 students in the class, 1st place counts as a pass.

(2) For students who choose a Non-thesis proposal, the Program director forms the oral defense committee with 3 committee members. The advisor cannot be included in the oral defense committee.

(3) Students who publish the first author research paper during the first 3 years may waive the qualification examination after obtaining approval from the BAI executive program committee. However, the research paper should not be the same or part of the graduation dissertation.

iii. Dissertation Proposal: Students need to pass the dissertation proposal within 3 years after entering the program. (voluntary suspension of schooling is not included in the 3 years.) The dissertation committee includes two academic advisors (primary advisor and co-mentoring advisor) and another three committee members who meet the Article 6 qualification defined in National Tsing Hua University Doctoral Degree Exam Statutes regulations. The ratio of committee members from off campus cannot be lower than 1/3.

iv. Research progress review: Students should start research progress review after passing the dissertation proposal defense. Students need to form the dissertation committee within 3 years after entering the program and report orally to the committee once every year.

v. Research paper publication: Publish a minimum of two publications in international academic journals or conferences with a peer review process. (The PhD student needs to be the first author in one of the papers and the advisor needs to be the corresponding author.)

vi. According to the "Regulations Governing the Implementation of the "Education on Academic and Research Ethics" at National Tsing Hua University, students must take the "Education on Academic and Research Ethics" course and pass the online exam. After completing all the requirements, students then may apply for the PhD degree examination.

vii. Dissertation and oral defense:

(1) Students in the Program in Biomedical Artificial Intelligence who want to apply for dissertation oral defense should complete the requirements listed below.

    (A) Meet the graduation requirements ii to vi.

    (B) Foreign language proficiency: the test score must be taken within the past six years. (IBT -TOFEL- 80, TOEIC 750, IELTS 6.5, pass the GEPT High Intermediate Level, or other equivalent test scores approved by the program committee.

(2) Application for oral defense examination should be set forth to the program office 3 weeks before the oral defense examination is held.

(3) The following supplemental documents must be submitted along with the oral defense application form to the program office:

    (A) Application form for oral defense exam with advisors and applicant's signatures on it.

    (B) Official transcript for all Ph.D. studies.

    (C) Dissertation draft with abstract included.

    (D) The hardcopy of publication in published journal format. If the paper had not been formally published, the proof of acceptance is required to be turned in.

    (E) The Similarity Reports of Thesis/Dissertation (Plagiarism Detection)

(4) Oral defense exam is hold publically by the committee. Committee members are recommended and formed by the primary and co-mentoring advisors.

(5) Qualification for the committee members: Two advisors are ex-officio members. The committee should include a minimum of three members meet the requirements of the Article 6 of National Tsing Hua University Doctoral Degree Exam Statutes regulations. The ratio of off-campus members cannot be lower than 1/3.

    (A) Professor or researcher at the rank of Assistant or higher rank.

    (B) Experts or professional scholars who received a doctorate for at least three years.

(6) Each Ph.D. candidate could only retake the defense exam once either next semester or next academic year if he/she failed the first time. Failure to defense the exam will result in being withdrawn from the school.

4. Doctor of Philosophy (Ph.D. degree): The Ph.D. degree is administered by the college with which the student's advisor is affiliated. Each student must

fulfill all the degree requirements and regulations to get a Ph.D. degree.

5. Tuition, fees and scholarships
    i.   Tuition and fees: the rate is the same for both domestic and international students according to the university's international doctoral students (engineering fields) standards. Depends on how many courses/credits are taken, $5000 NT dollars per credit for every credit.
    ii. Scholarships: Students may apply for scholarships depending on the university budget status.

6. Obligation: it's students' obligation to notify and obtain approval from the program committee if he/she is working on a second degree before class begins. If the student wants to study for a second degree, he or she needs to obtain approvals from the program committee in advance.

7. Others: Students should refer to the "Academic Regulations" of National Tsing Hua University for the regulations not shown in this bulletin. The Information and Degree Requirements for the Program in Biomedical Artificial Intelligence is implemented after being confirmed and approved by the program committee.