

# National Taiwan University of Science and Technology

## Graduate Institute of Biomedical Engineering Academic Regulations

(Applicable to Students Admitted in the 2025 Academic Year)

### 1. Graduation Credit Requirements

A total of 24 credits are required for graduation, of which 15 credits must be earned from the Graduate Institute of Biomedical Engineering. The remaining 9 credits may be offered by courses from other departments. To apply for recognition of external department courses as graduation credits, students must submit an "Application for Credit Recognition" and obtain the approval from the advisor.

### 2. Courses

- i. Graduate students must take Academic Research Ethics (Course Code: TC5001301 or TC5001302) (0 credit).
- ii. Students in either division of the Graduate Institute of Biomedical Engineering have 10 credits from the elective courses. The elective courses are mandatory, but students could complete them at the own pace in any order. (Please refer to the table below for more course information.)

Division	Course Name	Credits/Hours	EMI Course
Medical Mechatronics and Information	Special Topics on Biomedical Engineering (1)	2/2	
	Special Topics on Biomedical Engineering (2)	2/2	
	Physiology	3/3	
	Introduction to Biomedical Engineering	3/3	
	Biomathematics	3/3	V
	Bioimage Programming	3/3	V
	Machine Learning & Bio-imaging	3/3	V
	Human Motion Analysis	3/3	V
	Human Musculoskeletal Biomechanics	3/3	V
Clinical Biomedical Technology	Special Topics on Biomedical Engineering (1)	2/2	
	Special Topics on Biomedical Engineering (2)	2/2	
	Physiology	3/3	
	Introduction to Biomedical Engineering	3/3	
	Instrumental Analysis for Biomaterials	3/3	V
	Syntheses of Targeted Nanomaterials	3/3	V
	Technologies in Regenerative Medicine	3/3	V
	Drug Delivery Systems	3/3	V
	Machine Learning & Bio-imaging	3/3	V

### 3. Degree Examination Rules

As resolved at the 7<sup>th</sup> Departmental Meeting in the 2021 Academic Year, the following originality check standards for thesis examinations were added and will apply to graduates since the 2022 academic year.

- i. Thesis Comparison System and Settings: The thesis must be uploaded to Turnitin, as recommended by the university library, with the following settings: "Exclude quoted materials," "Exclude reference bibliography," and "Exclude sources less than 1%".
- ii. Similarity Index: If the similarity index includes the student's previously published papers, the index for those papers will be excluded from the calculation.
- iii. Threshold for Similarity Index: The similarity index should not exceed 30%. If it exceeds 30%, the student and advisor must sign off on the similarity index report.
- iv. Oral Exam: A complete comparison report (including the original document uploaded) must be submitted before the oral exam.

### 4. Graduation Requirements

- i. Environmental Health and Safety Workshop: Students must attend a 6-hour workshop and pass the exam.
- ii. Course of Institutional Review Board (IRB): Students must attend an 8-hour human subject research training and submit the IRB certificates to the secretary at the Graduate Institute of Biomedical Engineering.

### 5. English Graduation Requirements (Choose one of the following options)

- i. All graduate students must complete 4 credits of undergraduate English courses.
- ii. Students may apply for exemption if they pass a language test equivalent to the Intermediate level of the General English Proficiency Test (GEPT).
- iii. Students may apply for exemption by completing 9 credits of medical engineering-related courses in English offered by the graduate program (Effective from the 2023th academic year as per the 2nd Departmental Meeting of the 2023th academic year).
- iv. PhD students who have obtained a degree from an English-speaking country or have published papers in English, with a recommendation from their professor, may be exempt from the 4-credit English requirement, subject to review and approval by the academic committee.
- v. A reference table for language ability equivalent to the GEPT Intermediate level is as follows:

The General English Proficiency Test (GEPT)	Cambridge Main Suite	Linguaskill Business (BULATS)	Foreign Language Proficiency Test (FLPT)		Common European Framework of Reference for Languages: Learning, Teaching, Assessment (CEF)	Test of English as a Foreign Language (TOEFL)		Test of English for International Communication (TOEIC)	College Students English Proficiency Test (CSEPT)		International English Language Testing System (IELTS)
			Total Scores for 3 Writing Tests	Oral Test		Writing Section	Computer-Based		Level 1	Level 2	
Intermediate	Preliminary English Test (PET)	ALTE Level 2	195	S-2	B1 (Threshold)	457	137	550↑	230	240	4