

長庚大學  
生物醫學研究所  
Graduate Institute of  
Biomedical Sciences



2022  
Manual for  
International  
PhD Students



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## **Mission, Scopes, and Infrastructure**

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### **Name**

As approved by the Ministry of Education, Taiwan, the official name of the institute is "The Graduate Institute of Biomedical Sciences" (hereinafter referred to as GIBMS), Chang Gung University (hereinafter referred to as CGU).

### **Mission**

We are committed to providing a solid foundation of training in biomedical sciences and beyond. We empower students to become excellent biomedical scientists in theory, leadership, innovation, and practice.

### **Organization**

There is one director and various committees in our institute. The director is the representative of the institute. The director's responsibilities are to overlook the whole institute, coordinating the intra- and inter-institute committees. The committees are responsible for setting the guidelines for courses and developing the curriculum and details.

### **Amendments**

All amendments of the GIBMS became effective after a full review and approval by the Institute Committee, and are announced by the GIBMS website (<http://gibms.cgu.edu.tw/>).

## **Enrollment and Registration**

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Dates for enrollment and registration will be stated in the acceptance letter.

## **Dissertation Advisor**

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1. The thesis advisor must be a faculty member of medical college of CGU, which includes the Departments of basic medical sciences, GIBMS, Department of Medical Biotechnology and Laboratory Science, or Graduate Institute of Natural Products. Members who are not

affiliated with these institutes/departments can be also serve as a thesis adviser after approval by the respective divisional or institutional committee.

2. Responsibilities of the dissertation advisor:
  - (1) To guide the student in all academic matters, including course selection, paper assignment, experimental design and execution, and dissertation writing.
  - (2) To guide a student's extracurricular activities.
  - (3) To attend all committee meetings on the research progress of the student.
  - (4) To recommend committee members for student's evaluation.

Note 1. When a student needs to change advisor or the advisor is unable to continue his/her duty, a new advisor will be appointed with the approval by the original advisor, the newly assigned advisor and the Institute Director. The student needs to submit an application form to the GIBMS office for transfer.

Note 2. After approval by the Division Committee, an adjunct faculty member who is actively participating in teaching courses in his/her associated division will be qualified to serve as a thesis advisor.

Note 3. Only full-time faculty members are allowed to serve as the dissertation advisors of students in the Department of Medical Biotechnology and Laboratory Medicine and the Graduate Institute of Natural Products.

## **Courses and Credits**

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1. At least 18 credits are required for graduation, plus 6 credits from the thesis. The integrated Master's-PhD program requires 30 credits for graduation, including the credits earned in the Master's program.
2. Required courses
  - (1) Seminar: one credit per semester; 8 credits are required within the first to the fourth year.
  - (2) PhD dissertation: 6 credits offered after completion and passing the thesis defense.
3. Elective courses can be selected from the PhD Curriculum included in this document with the approval of the dissertation advisor.

#### 4. Study related regulations:

- (1) Doctoral students are expected to complete their studies in two to seven years. Extensions may be granted according to Article 16 of the CGU Academic Regulations.
- (2) The passing score for all courses and final defense: 70 (in the 100 grade system)

## **Guideline for Dissertation Preparation**

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1. All PhD students must select a dissertation advisor before the end of the first semester after enrollment.

2. Dissertation Advisory Committee:

All students must set up a dissertation advisory committee. The committee is comprised of 5 members; all members must hold a position equivalent to Assistant Professor/Researcher or above. Committee members are subject to future changes.

3. Dissertation Proposal and Progress Reports:

The dissertation proposal and progress reports must be presented in a committee meeting with a minimal of 3 committee members. For each committee meeting, students are required to submit a written report to the committee two weeks before the oral presentation. An evaluation report containing a grade must be signed by all attending committee members and submitted to the GIBMS office. Students should keep a copy for their own record. The passing grade is 70. Failure to hold a dissertation proposal or progress report meeting is considered a failure (0 points).

Note 1: Deadline for Dissertation Proposal:

Division of Microbiology: Before the start of the third semester after enrollment

Division of Biochemistry, Molecular and Cellular Biology/Division of Physiology and Pharmacology/Division of Biotechnology/ Division of Natural Products: Before the start of the fifth semester after enrollment (according to the official announced Academic Year Calendar)

#### Note 2: Timing of required Progress Report

Before the start of each Academic Year after the completion of the Dissertation Proposal (according to the official announced Academic Year Calendar)

Note 3: In case the student cannot hold his/her dissertation proposal and/or progress report on time, the student needs to apply for permission to postpone the meeting in advance. The application will be approved by both the thesis adviser and the Director of the GIBMS. The postponed dissertation proposal or progress report must be held within 3 months.

## **Qualifying Examination for PhD Candidate**

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### 1. Requirements for the qualifying examination:

Only those who have completed the compulsory courses (except for the Seminar course) and have the consent of the thesis advisor are eligible to take the doctoral candidate qualifying examination.

### 2. Examination content and timing:

- (1) The qualifying examination consists of two parts: a written examination on basic subjects and the writing and defense of a research proposal. Students may write and defend a research proposal only after passing the written examination on basic subjects, with a required passing score of 70 points or more; the required passing score for the research proposal is also 70 points. Students will be allowed to retake both parts of the examination a maximum of two times and will be dismissed from the Institution if they do not pass. Please refer to Appendix II for details about the examination on basic subjects for each group.
- (2) Applications for the qualifying examinations shall be submitted to the Graduate Institute of Biomedical Sciences by March 1 and September 1 of each year. The written examination on basic subjects shall be completed by April 30 and October 31; the writing and defense of the research proposal shall be completed by July 15 and

January 15. The written examination and the writing and defense of the research proposal shall be conducted in the same semester.

- (3) Students shall pass the qualifying examination by the end of the sixth semester after admission. Students who fail to pass the examination shall be dismissed from the Institution.

3. Rules of the oral examination committee for writing and defending the research proposal:

- (1) Four people are recommended by the convener of the oral examination (for a total of five people), but the thesis advisor shall not be present.
- (2) The oral examiners must be Assistant Professors or above.

4. Important points for writing a research proposal for the qualifying examination for PhD candidates:

The applicant shall submit a research proposal with the assistance of the Qualifying Examination Committee. The research proposal shall be written in English, submitted to the oral examination committee for review, and subject to an oral report and defense. Please refer to Appendix III for the contents of the research proposal.

5. Integrated MS–PhD program students who fail to pass the qualifying examination within six semesters after entering the PhD program may return to the Master’s program for further study and obtain a Master’s degree in accordance with the graduation requirements stipulated by the Institute after review by the Institute’s Board of Directors and approval by the university.

6. Other related matters:

- (1) Students who pass the examination will be listed as doctoral candidates.
- (2) After taking the qualifying examination, students in the PhD program shall not apply for suspension during the semester if there is no compelling reason.

## Requirements for Degree Examination

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1. The consent of the thesis advisor.
2. Only those with the following qualifications can enter the degree oral examination.
  - (1) Completion of the required courses for the doctoral program.
  - (2) Completion of the thesis requirements such as the thesis proposal and progress reports.
  - (3) Certificate of passing the doctoral qualification examination.
  - (4) Certificate of completing the "Taiwan Academic Research Ethics Education" course.
  - (5) Publication of research papers (non-review type) during the course of study, which must meet any of the following requirements:
    - i. One SCI paper with first authorship and at least 5 SCI points or in the top 25% ranking of the respective field.
    - ii. Two SCI papers with first authorship, both of which are at least one SCI point or in the top 50% ranking of the respective field.
    - iii. One SCI paper with first authorship, and at least 1 SCI point or in the top 50% ranking of the respective field, plus two co-authored papers with at least 1 SCI point.
    - iv. One SCI paper with first authorship, and at least 1 SCI point or in the top 50% ranking of the respective field, plus a patent or technology transfer jointly published with the thesis advisor.

### Note:

- a. For publication with a SCI of less than 10.0, it can be used for graduation only once by one first-author student listed.
- b. For publication with a SCI of 10.0 or more, it can be used by two first-author students (if available) for graduation.
- c. A publication submitted as a graduation requirement must have their supervisor listed as the corresponding author or co-corresponding author. If any other



student within GIBMS is also a co-first author, the co-author must formally waive the right to use the publication for graduation.

- d. The citation impact factor of the paper is determined based on its highest number or ranking recorded during the student's matriculation period.
- e. "Graduate Institute of Biomedical Sciences, Chang Gung University" must be listed as an affiliation on the paper. Under the circumstance where the student's supervisor cannot be the corresponding author or co-corresponding author of the paper, the supervisor must provide a formal written explanation and submit it to the division director for evaluation.

(6) Participate in the PhD class poster contest held by our Institute twice as the author of the poster.

## **Requesting the Degree Examination**

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**Please refer to the “Guidelines for Degree Examination” posted by Graduate Studies Section, Office of Academic Affairs.**

- 1. Stage one (review all credits):
  - (1) Completion of the “Achievement Review Form”
  - (2) Application period: For the 1<sup>st</sup> semester, from August 1 to November 30. For the 2<sup>nd</sup> semester, from February 1 to April 30.
- 2. Stage two (oral examination)
  - (1) Completion of “Application Form for Degree Examination”
  - (2) Application period: For the 1<sup>st</sup> semester, from August 1 to December 31. For the 2<sup>nd</sup> semester, from February 1 to May 31.
  - (3) In addition to the guidelines and regulations laid out in the bulletin (Graduate Studies Section, Office of Academic Affairs), students have to complete the requests disclosed in the “Doctoral Oral Defense Application Form” for the GIBMS and provide corresponding records. The graduating students must submit the original copies of

papers to the department office and upload the copies to the 035A archive under the online approval process.

- (4) Submit the examination date to the “University Affairs Information System” and print out the "Overall Score Sheet" and "Score Sheet".

## **Details of the Degree Examination**

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1. All examination-related regulations and implementations are in accordance with the "CGU Master's and Doctoral Degree Examination Implementation Measures" issued by the Office of Academic Affairs. Candidates shall file the 035A “Degree Examination” form on line with the location and time of the examination. Evaluation forms shall be printed out.

2. Oral Examination Deadline:

The Degree Examination Application form needs to be completed by the candidate before taking the oral examination. The final Oral Examination Evaluation form needs to be submitted to the Office of Academic Affairs before 31<sup>st</sup> July or 31<sup>st</sup> January.

3. The Thesis Originality Comparison form:

Candidates need to complete the “Thesis Originality Comparison” form before the Oral Examination and provide the form to the examiners on the day of the oral examination.

4. Examination Committee Members:

- (1) In principle, the Oral Defense Committee shall consist of 5 examiners (including external examiners). However, 6 examiners are needed if the candidate is supervised by 2 thesis advisors. One third (1/3) of the examiners must be external. The thesis advisor is the ex-officio member of the Oral Defense Committee, but cannot serve as the Committee convener.
- (2) The members of the PhD degree Oral Defense Committee must hold a position equivalent to Assistant Professor/Researcher or above in a University or Research Institute in Taiwan, ROC.

(3) Once verified, the Oral Defense Committee cannot be changed without a proper reason. If there is a need to change the Oral Defense Committee, the 035B form (Application for the change of the Degree Examination) needs to be submitted.

5. Dissertation:

The dissertation draft formatted according to the “Format Guidelines for Doctoral Dissertations” and approved by the thesis advisor, needs to be delivered to the examiners two weeks before the examination.

6. Oral Defense:

- (1) Candidates shall present their dissertation and answer to examiners’ questions at the designated location and time agreed by the examiners.
- (2) The final grade of the oral defense shall be the average of the grades decided by all attending examiners. A minimum final grade of 70 is needed to pass the oral defense. In addition, the oral defense is considered failed if 1/3 or more of the attending examiners give a grade of under 70.
- (3) The candidate who has failed the oral defense may retake the oral defense once during the remaining school years. The candidate shall be expelled from the school should he/she fail the second oral defense.
- (4) Following the successful passing of the oral defense, the candidate shall complete the final PhD thesis and obtain the recommendation letter form the thesis advisor and the examiners’ approval form, and submit the final Dissertation.
- (5) For those who are in the integrated bachelor-PhD/Master’s-PhD programs who fail the Oral Defense, he/she shall receive a Master’s degree following the review of GIBMS committee meeting.

## **Procedure of Graduation**

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1. Submitting a doctoral dissertation:

- (1) The final version of the dissertation must be revised in accordance with the suggestions given by the dissertation committee.

(2) Upon finalization, the full version of the dissertation in accordance with the graduation thesis format has to be uploaded to the Chang Gung University Library > E-Resources > Thesis/Dissertation. After approval, the dissertation is printed in the prescribed format in paperback. One copy is then sent to the GIBMS, one copy to the library, and one copy to the Office of Academic Affairs (this copy will be transferred to the National Central Library).

## 2. Leaving CGU:

- (1) According to the items listed in "School Leaving Procedure Form" obtained from the school affairs information system, go to the relevant offices to complete and verify the procedures.
- (2) Deadline for submitting "School Leaving Procedure Form" to the Office of Academic Affairs is August 15th for graduation in the first semester, or February 15th for the second semester.
- (3) The requirements of GIBMS for the School Leaving Procedure are: (i) A completed "Application Form for Students Leaving the Laboratory of the GIBMS " (please download it from the GIBMS website), and (ii) a copy of dissertation.

3. Our graduate students are awarded a "Doctor of Philosophy" degree in Biomedicine after completing their doctoral studies.

## Lists of Courses

Graduate Program Ph.D Curriculum (2022~2023)							
<p>1. Students pursuing a PhD degree must fulfill a minimum 18 course credits and 6 credits for PhD dissertation. Students may choose any courses listed below. With the approval of the advisor, students may also take courses offered by other doctoral programs in CGU to meet the credit requirement for graduation; only the total credits earned from other PhD programs cannot exceed 50% of the total elective credits for graduation. For students without a MS degree, 30 credits are required for graduation (plus 6 credits for PhD dissertation).</p> <p>2. The 6 credits for PhD Dissertation are given after passing the final defense and submitting the approved dissertation.</p> <p>3. See PhD student manual for graduation requirements.</p>							
Divisions	Course Title	Credit	Year	Semester		Note	
				Fall	Spring		
General Required Courses	Seminar (*)	8	1	1	1	Students must take all 8 semesters.	
			2	1	1		
			3	1	1		
			4	1	1		
	Scientific Integrity and Scientific Writing (*)	2	2		2		
Suggested Courses	Biochemistry and Cellular Molecular Biology	Advanced Biochemistry	3	1	3		
		Cell Biology	3	1	3		
		Molecular Biology	4	1		4	
	Microbiology and Immunology	Microbiology-Bacteriology (*)	2	1	2		
		Microbiology-Parasitology	2	1	2		
		Microbiology-Virology	2	1		2	
		Immunology	2	1		2	
	Physiology and Pharmacology	Human Physiology (*)	4	1	4		
		Medicinal Pharmacology (*)	4	1		4	
	Biotechnology	Advanced Technologies in Systems Biology (*)	3	1	3		
	National Products	Special Topics in Natural Products	2	1	2		
	Elective Courses	Biochemistry and Cellular Molecular Biology	Special Topics in Biochemistry, Cell & Molecular biology (1) (*)	2	1	2	
			Biological and Biomedical English Paper Writing Style (*)	2	1	2	
Biochemistry and Molecular Biology(*)			2	1	2		
Special Topics in Membrane Trafficking and Exocytosis(*)			2	1		2	
Advanced Cell Biology (*)			2	1		2	
Cell Growth and Apoptosis (*)			2	1		2	
Special Topics in Biochemistry, Cell & Molecular biology (2) (*)			2	1		2	
Microbiology and Immunology		Advances in Microbiology (*)	2	1		2	
		Advances in Immunology (*)	2	1		2	
		Advanced Immunology (*)	3	1	3		For students with basic knowledge in Immunology.
		Bioinformatics & Biostatistics (*)	2	1	2		
Physiology and Pharmacology		Cellular Physiology & Signal Transduction (*)	2	1	2		

	<b>Biotechnology</b>	Molecular Imaging (*)	3	1	3		Offered bi-annually, starting in 2007
		Vaccine Development (*)	3	1	3		Offered bi-annually, starting in 2009
		Special Topics in Emerging Viruses (*)	2	1	2		
		Special Topics in RNA Viruses (*)	2	1	2		
		Free Radical Biology and Medicine (*)	2	1	2		
		Translational Cancer Medicine (*)	2	1	2		Prerequisite: Cell Biology or Molecular Biology
		Advanced Bacteriology (*)	2	1		2	
	<b>Others</b>	Animal Model for Studying Emerging Infectious Diseases(*)	2	1	2		Offered by the International Master Program for Molecular Medicine in Emerging Viral Infections (MMEVI)
		Genomic Data Science (*)	2	1	2		
		Deep Learning with Python (*)	2	1	2		
		The Biotechnology Regulations (*)	1	1	1		
		Molecular & Cellular Biology (*)	2	1	2		
		Technologies and Advances in Emerging Viral Infections (*)	2	1		2	
Methodology of Molecular Virology (*)	2	1		2			
Anti-virus Drug Development (*)	2	1		2			
Advanced Clinical Virology (*)	2	1		2			
Test Reagent Kit Development (*)	2	1		2			

Note:

1. Subjects chosen by students must be approved and signed by the Dissertation supervisor.
2. An asterisk (\*) indicates a course taught in English.

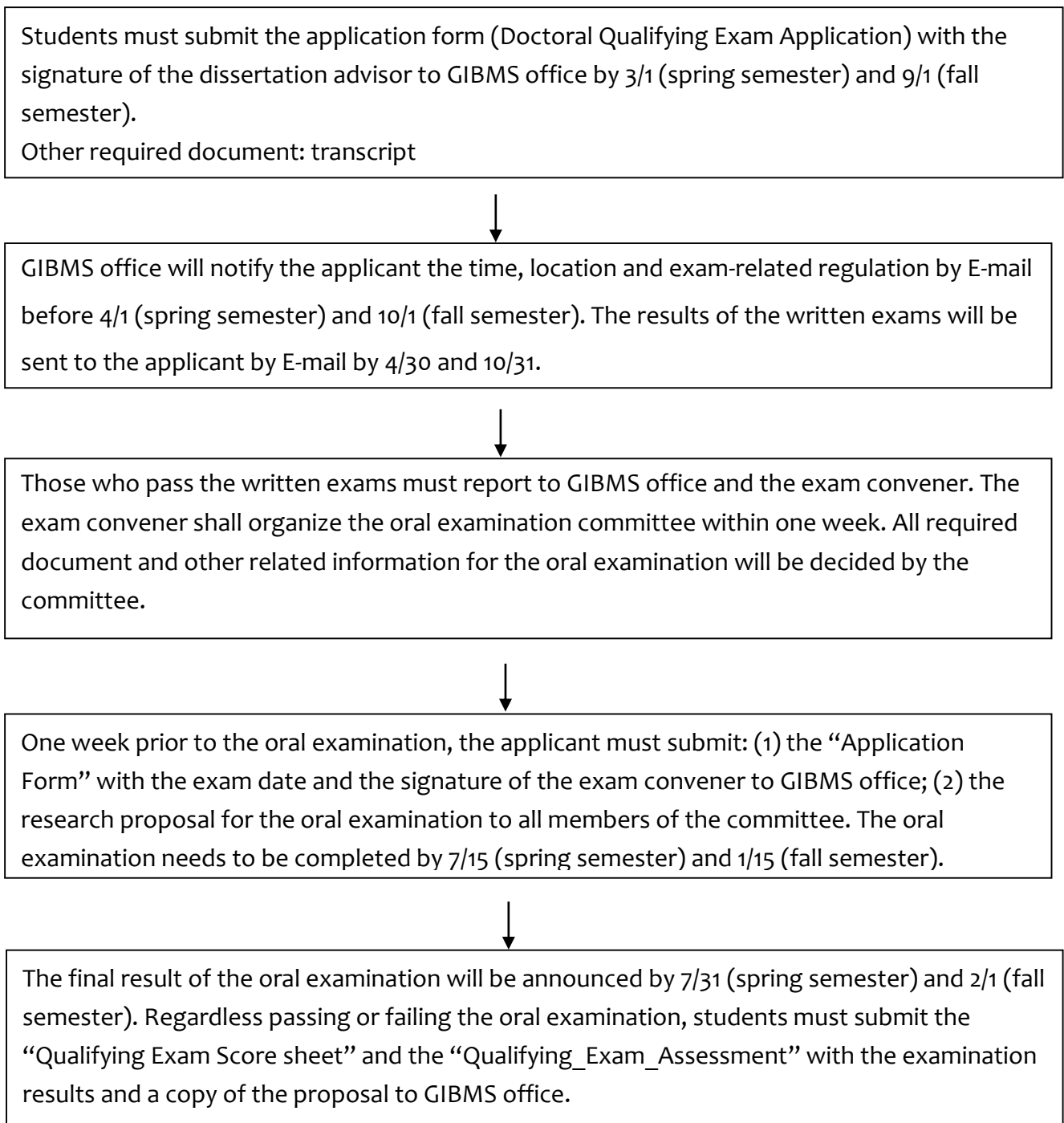
Director of GIBMS: \_\_\_\_\_

Head of the Course Committee: \_\_\_\_\_

## Appendix 1. Procedures and Timeline of the Qualifying Examination

The following requirements for the qualification examination of the GIBMS doctoral program are composed by the GIBMS Course Committee in accordance with the regulations of each division.

A flow chart of the GIBMS qualification examination:



## **Appendix 2. Details of the Qualifying Examinations, by division**

### **(A) Division of Biochemistry, Molecular and Cellular Biology**

Take two exams from the topics of three required courses (Advanced Biochemistry, Molecular Biology and Cell Biology). The passing grade is 70 for each exam. Those who fail may apply to retain the test scores higher than 70, and the advisor needs to sign on the application form.

### **(B) Division of Microbiology**

Take two exams from the topics of four microbiology courses (Bacteriology, Virology, Parasitology and Immunology). An average of 70 is required to pass the qualifying exam. Those who fail may apply to retain the test scores higher than 70, and the advisor needs to sign on the application form.

### **(C) Division of Physiology and Pharmacology**

Main exam subjects: Take one exam from Physiology or Pharmacology.

Second exam subjects: Take one exam from the topic of four fields (Neuroscience, Circulatory system, Endocrine system, and Cell Biology). The passing grade is 70 for each exam. Those who fail may retake one exam alone, and the second exam subjects can be changed. The examination is organized by the committee members

### **(D) Division of Biotechnology**

Take one required exam and another one from the selected exam subjects. The passing grade is 70 for each exam.

Required exam: Advanced Technologies in Systems Biology.

Selected exam subjects: Translational Cancer Medicine, Free Radical Biology and Medicine, Molecular Imagine, Advanced Bacteriology and Special Topics in RNA Viruses. The examination is organized by the Student Guidance Committee.

### **(E) Division of Natural products**

Take one exam from the topics of two required courses (Special Topics in Pharmaceutical Biotechnology and Special Topics in Natural Products). The passing grade is 70. The examination is organized by the committee members.



## Appendix 3. Guidelines for the Dissertation Proposal

1. The main body is 1.5 times the line height, 12-point font, the English font is Times New Roman.
2. The contents and the limited number of pages are as follows:

Components	Contents	page
Cover Page	Include the title, names of the student and the advisor, time and location of the oral examination, and student contact information	1
Abstract	Written in both Chinese and English, one page each; include brief summary of background, essential questions, methods to be used, and potential contribution.	1+1
Specific Aims	State the specific purpose of the research and the hypotheses to be tested.	1
Background and Significance	Review briefly the background to the proposal. State concisely the importance of the research by relating the specific aims to the gaps of knowledge in the field.	3~5
Study Design and Rationale	Provide a description of the research design and procedures to be used to accomplish the specific aims. Potential experimental difficulties and limitations of the approaches should be discussed together with alternative approaches that could achieve the desired aims.	5~8
Methods (optional)	Describe how the experiments will be conducted. Avoid directly copy/paste from other papers or proposals.	$\leq 3$
Anticipated Results	Include potential problems and alternative approaches.	$\leq 2$
Figures and Tables	Present critical findings from other investigators (include the references underneath) and/or preliminary data from the applicant.	$\leq 8$
References	Updated references in a consistent format ( $\leq 50$ references)	

## Appendix 4 : Forms for graduate students

Please refer to the link ([www.gibms.com.tw](http://www.gibms.com.tw)) for detailed information.

### Student related forms

-  學生指導教授指導確認書 Advisor Agreement.doc
-  課程免修核定 Course Exemption Confirmation Form.doc
-  教學相關經驗報告書 Doctoral Student Teaching Experience Report.doc
-  博士班獎學金申請表 Scholarship for PhD Student Application Form.docx
-  更換指導教授申請書 Change Advisor Application Form.doc
-  教學經驗申請表(中英文).docx
-  長庚大學生物醫學研究所教學助教評核作業細則-修改.doc
-  學生指導教授指導確認書 Advisor Agreement.odt
-  更換指導教授申請書 Change Advisor Application Form.odt
-  課程免修核定 Course Exemption Confirmation Form.odt
-  教學相關經驗報告書 Doctoral Student Teaching Experience Report.odt
-  博士班獎學金申請表 Scholarship for PhD Student Application Form.odt
-  教學經驗申請認定表 Doctoral Teaching Experience Application Form.odt
-  長庚大學生物醫學研究所教學助教評核作業細則-修改.odt





### Thesis and qualifying related forms

論文大綱/進度/資格考申請表單連結(線上填寫請按此)

-  評分表 Presentation\_Score\_Sheet.doc
-  論文報告申請書 Application Form.doc
-  資格考書面報告 guideline.doc
-  資格考口試總評表 Qualifying Exam Assessment.doc
-  資格考口試評分表 Qualifying Exam Score sheet.doc
-  資格考申請書 Doctoral Qualifying Exam Application.doc
-  評分表 Presentation Score Sheet.odt

-  論文報告申請書 Application Form.odt
-  資格考書面報告 guideline 英文.odt
-  資格考口試評分表 Qualifying Exam Score sheet.odt
-  資格考申請書 Doctoral Qualifying Exam Application.odt
-  資格考口試總評表 Qualifying\_Exam\_Assessment.odt

### seminar related forms

-  seminar score for teacher.doc
-  seminar-score.doc
-  seminar score for teacher.odt
-  seminar-score.odt