



Mahidol University  
Institute of  
Molecular Biosciences

# MGGE



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International Program  
Molecular Genetics and Genetic Engineering

# STUDENT HANDBOOK 2019

*Wisdom of the Land*



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## 1. Administration

### 1.1 Administrators

|                                  |                 |
|----------------------------------|-----------------|
| Prof. Narattaphol Charoenphandhu | Director        |
| Assoc. Prof. Apinunt Udomkit     | Deputy Director |
| Asst. Prof. Narisorn Kitiyanant  | Deputy Director |

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### 1.2 M.Sc.-Ph.D. Administrative Program Committee

|   |                    |
|---|--------------------|
| Prof. Emeritus Sakol Panyim             | Program Advisor    |
| Asst. Prof. Thananya Thongtan           | Program Advisor    |
| Assoc. Prof. Panadda Boonserm           | Program Director   |
| Assoc. Prof. Wipa Chungjatupornchai     | Member             |
| Assoc. Prof. Chalernporn Ongvarrasopone | Member             |
| Assoc. Prof. M.L. Saovaros Svasti       | Member             |
| Asst. Prof. Kusol Pootanakit            | Member             |
| Lect. Dr. Chalongrat Noree              | Member             |
| Lect. Dr. Poochit Nonejuie              | Member             |
| Assoc. Prof. Apinunt Udomkit            | Member & Secretary |

## 2. Graduate Programs

The international postgraduate program in *Molecular Genetics and Genetic Engineering* was established in 1994. The program provides comprehensive lectures and research opportunities in both basic and applied aspects as follows:

- Molecular Medicine
- Molecular Biology for Agricultural and Industrial Applications
- Molecular Microbiology
- Bio-Energy Research
- Structural Molecular Biology
- Bioinformatics
- Multi-Omics
- Drug Discovery
- Genome Editing and Cell-Based Technology

In its quest for excellence, the program has sought staff members with a high degree of professional competence and broad intellectual interests.

### Education Philosophy

The M.Sc. program philosophy is to produce graduates with specialized knowledge and skills in Molecular Biology/Genetics and related fields and ability to apply their proficiency for the benefit of society and mankind.

The Ph.D. program philosophy is to produce graduates with in-depth knowledge and professional skills in Molecular Biology/Genetics and related fields and ability to drive innovation for the benefit of society and mankind.

### Career Opportunities of the Graduates

- Academic staff in Molecular Genetics and relevant disciplines in the university
- Researchers in research institutes, universities or private sectors
- Biotechnology entrepreneurs
- Others such as sale representatives or product specialists

## 2.1 Curriculum

### 2.1.1 Master of Science Program

The M.Sc. curriculum consists of one-year course work (24 credits) and one-year research project (12 credits). Possible transfer to the Ph.D. program after completion of at least two years study would be considered on the basis of academic performance.

| Year | Semester 1  | Semester 2  |
|------|---|---|
| 1    | MBMG 500 Essentials in Molecular Biology 2 (2-0-4)<br>MBMG 512 DNA Engineering 2 (1-2-3)<br>MBMG 513 Gene Expression and Applications 3 (2-2-5)<br>Elective course not less than 3 credits<br><br><b>Total 10 credits</b> | MBMG 514 Protein Structure and Function 3 (2-2-5)<br>MBMG 515 Protein Technologies and Applications 2 (1-2-3)<br>MBMG 516 Cell Technologies and Applications 3 (1-6-4)<br>MBMG 615 Research Rotations in Molecular Biology 3 (0-9-3)<br><br><b>Total 11 credits</b> |
| 2    | MBMG 521 Molecular Genetics and Genetic Engineering Seminar I 1 (1-0-2)<br>Elective course not less than 1 credit<br>MBMG 698 Thesis 6 (0-18-0)<br><br><b>Total 8 credits</b>   | MBMG 522 Molecular Genetics and Genetic Engineering Seminar II 1 (1-0-2)<br>MBMG 698 Thesis 6 (0-18-0)<br><br><b>Total 7 credits</b>  |

### 2.1.2 Doctor of Philosophy Program

The Doctor of Philosophy program is composed of two study plans.

**2.1.2.1** The first study plan is a research program designed for those who obtained an M.Sc. degree with research experience. No course work is required.

### Plan 1 Dissertation only

| Year | Semester 1   | Semester 2   |
|------|--|--|
| 1    | (Qualifying Examination)<br>MBMG 898 Dissertation 8 (0-24-0)<br><b>Total 8 credits</b> | MBMG 898 Dissertation 8 (0-24-0)<br><b>Total 8 credits</b> |
| 2    | MBMG 898 Dissertation 8 (0-24-0)<br><b>Total 8 credits</b>                             | MBMG 898 Dissertation 8 (0-24-0)<br><b>Total 8 credits</b> |
| 3    | MBMG 898 Dissertation 8 (0-24-0)<br><b>Total 8 credits</b>                             | MBMG 898 Dissertation 8 (0-24-0)<br><b>Total 8 credits</b> |

#### Notes:

1. Students may take some coursework upon the recommendation of the major advisor or the program committee and must meet the assessment criteria of the course (e.g. *seminar course registration for Audit*).
2. This study plan may include overseas research experience.

**2.1.2.2** The second study plan consists of both course work and research.

### Plan 2 Course works and Dissertation

#### Plan 2.1 For students holding an M.Sc. degree

For those who obtained an M.Sc. degree, students are expected to undertake at least 12 credits of course work and conduct a research thesis for 36 credits.

| Year | Semester 1  | Semester 2   |
|------|---|--|
| 1    | MBMG 504 Advanced Research skill in<br>Molecular Biology 3 (0-9-3)<br>Elective course not less than 2 credits<br>(Qualifying Examination)<br><b>Total 5 credits</b> | MBMG 699 Dissertation 8 (0-24-0)<br>Elective course not less than 1 credit<br><b>Total 9 credits</b> |
| 2    | MBMG 621 Doctoral Seminar in<br>Molecular Genetics and<br>Genetic Engineering   | MBMG 622 Doctoral Research Seminar in<br>Molecular Genetics and Genetic<br>Engineering               |

| Year | Semester 1   | Semester 2  |
|------|--|---|
|      | 1 (1-0-2)<br>MBMG 699 Dissertation 7 (0-21-0)<br>Elective course not less than 3 credits<br><b>Total 11 credits</b>  | 1 (1-0-2)<br>MBMG 699 Dissertation 7 (0-21-0)<br><br><b>Total 8 credits</b> |
| 3    | MBMG 623 Advanced Doctoral Research<br>Seminar in Molecular<br>Genetics and Genetic<br>Engineering 1 (1-0-2)<br>MBMG 699 Dissertation 7 (0-21-0)<br><b>Total 8 credits</b> | MBMG 699 Dissertation 7 (0-21-0)<br><br><b>Total 7 credits</b>              |

### Plan 2.2 For students holding an B.Sc. degree

For those who graduated with a B.Sc. Degree with a GPA above 3.5, the course requirements are 26-credit course work including seminars and a 48-credit research thesis.

| Year | Semester 1   | Semester 2  |
|------|--|---|
| 1    | MBMG 500 Essentials in Molecular<br>Biology 2 (2-0-4)<br>MBMG 512 DNA Engineering<br>2 (1-2-3)<br>MBMG 513 Gene Expression and<br>Applications 3 (2-2-5)<br>Elective course not less than 3 credits<br><b>Total 10 credits</b> | MBMG 514 Protein Structure and<br>Function 3 (2-2-5)<br>MBMG 515 Protein Technologies and<br>Applications 2 (1-2-3)<br>MBMG 516 Cell Technologies and<br>Applications 3 (1-6-4)<br><br><b>Total 8 credits</b> |
| 2    | (Qualifying Examination)<br>MBMG 504 Advanced Research Skill in<br>Molecular Biology 3 (0-9-3)<br>Elective course not less than 2 credits<br><b>Total 5 credits</b>  | MBMG 799 Dissertation 8 (0-24-0)<br>Elective course not less than 1 credit<br><br><b>Total 9 credits</b>  |

| Year | Semester 1   | Semester 2  |
|------|--|---|
| 3    | MBMG 621 Doctoral Seminar in Molecular Genetics and Genetic Engineering<br><div>1 (1-0-2)</div> MBMG 799 Dissertation 10 (0-30-0)<br><b>Total 11 credits</b>                   | MBMG 622 Doctoral Research Seminar in Molecular Genetics and Genetic Engineering<br><div>1 (1-0-2)</div> MBMG 799 Dissertation 10 (0-30-0)<br><b>Total 11 credits</b> |
| 4    | MBMG 623 Advanced Doctoral Research Seminar in Molecular Genetics and Genetic Engineering<br><div>1 (1-0-2)</div> MBMG 799 Dissertation 10 (0-30-0)<br><b>Total 11 credits</b> | MBMG 799 Dissertation<br><div>10 (0-30-0)</div> <b>Total 10 credits</b>   |



## 2.2 List of Courses

### Required Courses

|          |  | Credit (Lecture-Lab-Self Study) |
|----------|--|---------------------------------|
| MBMG 500 | Essentials in Molecular Biology  | 2 (2-0-4)                       |
| MBMG 504 | Advanced Research Skills in Molecular Biology                                    | 3 (0-9-3)                       |
| MBMG 512 | DNA Engineering  | 2 (1-2-3)                       |
| MBMG 513 | Gene Expression and Applications   | 3 (2-2-5)                       |
| MBMG 514 | Protein Structure and Function   | 3 (2-2-5)                       |
| MBMG 515 | Protein Technologies and Applications  | 2 (1-2-3)                       |
| MBMG 516 | Cell Technologies and Applications   | 3 (1-6-4)                       |
| MBMG 521 | Molecular Genetics and Genetic Engineering Seminar I                             | 1 (1-0-2)                       |
| MBMG 522 | Molecular Genetics and Genetic Engineering Seminar II                            | 1 (1-0-2)                       |
| MBMG 615 | Research Rotations in Molecular Biology  | 3 (0-9-3)                       |
| MBMG 621 | Doctoral Seminar in Molecular Genetics and Genetic Engineering                   | 1 (1-0-2)                       |
| MBMG 622 | Doctoral Research Seminar in Molecular Genetics and Genetic Engineering          | 1 (1-0-2)                       |
| MBMG 623 | Advanced Doctoral Research Seminar in Molecular Genetics and Genetic Engineering | 1 (1-0-2)                       |

### Elective Courses

|          |  |           |
|----------|--|-----------|
| MBMG 601 | Current Topics in Molecular Biology                        | 1 (1-0-2) |
| MBMG 610 | Innovation in Research                                     | 1 (1-0-2) |
| MBMG 614 | Analysis of Research Publications for Molecular Bioscience | 2 (0-6-2) |
| MBSB 501 | Systems Biosciences  | 3 (3-0-6) |
| MBSB 604 | Virus-Cell Interactions and Immunity                       | 3 (3-0-6) |
| GRID 521 | Research Ethics  | 1 (1-0-2) |
| SCBC 612 | Functional Genetics and Genomics                           | 2 (2-0-4) |
| SCID 500 | Cell and Molecular Biology                                 | 3 (3-0-6) |
| SCID 518 | Generic Skills in Science Research                         | 1 (1-0-2) |

## 2.3 Faculty

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*Member of the Administrative Program Committee*

## 3. Appendices

### 3.1 Program Learning Outcomes (PLOs)

#### 3.1.1 Program Learning Outcomes (Master of Science Program)

At the completion of the program, students will be able to:

- PLO1** Integrate comprehensive knowledge in Molecular Biology and related disciplines to solve scientific research problems.
- PLO2** Conduct systematic research in Molecular Biology with specialized technical skills.
- PLO3** Present research findings in Molecular Biology to scientific community.
- PLO4** Demonstrate scientific integrity including ethical responsibilities and safety practices as appropriate.
- PLO5** Acquire professional and interpersonal skills for lifelong learning.

#### 3.1.2 Program Learning Outcomes (Doctor of Philosophy Program)

At the completion of the program, students will be able to:

- PLO1** Formulate and test hypothesis from substantial body of knowledge by independently conducting research in Molecular Biology
- PLO2** Originate new insights in Molecular Biology and research output at international standard.
- PLO3** Disseminate novel concepts and/or innovative ideas in Molecular Biology to international scientific community.
- PLO4** Demonstrate proficiency in scientific integrity including ethical responsibilities and safety practices as appropriate.
- PLO5** Master professional and interpersonal skills for lifelong learning and career development.

### 3.2 Curriculum Mapping (M.Sc.)

| No. | Course code | Course title   | Credits<br>(lecture-lab-self study) | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 |
|-----|-------------|--|-------------------------------------|------|------|------|------|------|
| 1   | MBMG500     | <b>Required courses</b><br>Essentials in Molecular Biology | 2(2-0-4)                            | I    |      |      | I    | R    |
| 2   | MBMG512     | DNA Engineering  | 2(1-2-3)                            | R    | I    | I    | R    | R    |
| 3   | MBMG513     | Gene Expression and Applications                           | 3(2-2-5)                            | R    | I    | I    | R    | R    |
| 4   | MBMG514     | Protein Structure and Function                             | 3(2-2-5)                            | R    | I    | I    | R    | R    |
| 5   | MBMG515     | Protein Technologies and Applications                      | 2(1-2-3)                            | R    | I    | I    | R    | R    |
| 6   | MBMG516     | Cell Technologies and Applications                         | 3(1-6-4)                            | R    | I    | I    | R    | R    |
| 7   | MBMG521     | Molecular Genetics and Genetic Engineering Seminar I       | 1(1-0-2)                            | M    |      | R    | R    | R    |
| 8   | MBMG522     | Molecular Genetics and Genetic Engineering Seminar II      | 1(1-0-2)                            | M    | R    | M    | P    | P    |
| 9   | MBMG615     | Laboratory Rotations in Molecular Biology                  | 3(0-9-3)                            | R    | R    | R    | M    | R    |
|     |             | <b>Elective courses</b>                                    |                                     |      |      |      |      |      |
| 1   | MBMG601     | Current Topics in Molecular Biology                        | 1(1-0-2)                            | R    |      | R    | R    | R    |
| 2   | SCID500     | Cell and Molecular Biology                                 | 3(3-0-6)                            | I    |      |      |      | I    |
| 3   | SCID 518    | Generic Skills in Science Research                         | 1(1-0-2)                            | R    | I    | I    | R    | R    |
| 4   | GRID521     | Research Ethics  | 1(1-0-2)                            | R    |      |      | R    | R    |
|     |             | <b>Thesis</b>  |                                     |      |      |      |      |      |
|     | MBMG698     | Thesis   | 12(0-36-0)                          | M    | M    | M    | M    | M    |

**Notes:**

I = ELO is introduced & assessed      R = ELO is reinforced & assessed  
P = ELO is practiced & assessed      M = Level of Mastery is assessed

### 3.3 Curriculum Mapping (Ph.D.)

| No. | Course code | Course title   | Credits<br>(lecture-lab-self study) | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 |
|-----|-------------|--|-------------------------------------|------|------|------|------|------|
|     |             | <b>Required Courses</b>  |                                     |      |      |      |      |      |
| 1   | MBMG 500    | Essentials in Molecular Biology  | 2(2-0-4)                            | I    |      |      | R    | R    |
| 2   | MBMG 512    | DNA Engineering  | 2(1-2-3)                            | I    |      |      | R    | R    |
| 3   | MBMG 513    | Gene Expression and Applications   | 3(2-2-5)                            | I    |      |      | R    | R    |
| 4   | MBMG 514    | Protein Structure and Function   | 3(2-2-5)                            | I    |      |      | R    | R    |
| 5   | MBMG 515    | Protein Technologies and Applications  | 2(1-2-3)                            | I    |      |      | R    | R    |
| 6   | MBMG 516    | Cell Technologies and Applications   | 3(1-6-4)                            | I    |      |      | R    | R    |
| 7   | MBMG 504    | Advanced Research Skills in Molecular Biology                                    | 3(0-9-3)                            | M    | R    | P    | M    | P    |
| 8   | MBMG 621    | Doctoral Seminar in Molecular Genetics and Genetic Engineering                   | 1(1-0-2)                            |      |      | R    | M    | M    |
| 9   | MBMG 622    | Doctoral Research Seminar in Molecular Genetics and Genetic Engineering          | 1(1-0-2)                            | R    | R    | R    | M    | M    |
| 10  | MBMG 623    | Advanced Doctoral Research Seminar in Molecular Genetics and Genetic Engineering | 1(1-0-2)                            | P    | R    | M    | M    | M    |
|     |             | <b>Elective Courses</b>  |                                     |      |      |      |      |      |
| 1   | MBMG 610    | Innovation in Research   | 1(1-0-2)                            | I    | I    | R    | R    | P    |
| 2   | MBMG 614    | Analysis of Research Publications for Molecular Biosciences                      | 2(0-6-2)                            | R    |      | R    | P    | P    |
| 3   | MBSB 501    | Systems Biosciences  | 3(3-0-6)                            | I    |      |      | R    | R    |
| 4   | MBSB 603    | Molecular Diagnosis and Molecular Therapy  | 2(2-0-4)                            | I    |      |      | R    | R    |
| 5   | MBSB 604    | Virus-Cell Interactions and Immunity   | 3(3-0-6)                            | I    |      |      | R    | R    |

| No. | Course code | Course title                       | Credits<br>(lecture-lab-self study) | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 |
|-----|-------------|------------------------------------|-------------------------------------|------|------|------|------|------|
| 6   | SCBC 612    | Functional Genetics and Genomics   | 2(2-0-4)                            | I    | R    | I    | I    |      |
|     | SCID 500    | Cell and Molecular Biology         | 3(3-0-6)                            | I    | I    | I    | I    |      |
|     | SCID 518    | Generic Skills in Science Research | 1(1-0-2)                            | R    | I    | I    | R    | R    |
| 3   | GRID 521    | Research Ethics                    | 1(1-0-2)                            | R    | I    |      | P    |      |
|     | GRID 603    | Biostatistics                      | 3(3-0-6)                            | R    | I    |      |      | R    |
|     |             | <b>Dissertation</b>                |                                     |      |      |      |      |      |
| 1   | MBMG 699    | Dissertation                       | 36 (0-108-0)                        | M    | M    | M    | M    | M    |
| 2   | MBMG 799    | Dissertation                       | 48 (0-144-0)                        | M    | M    | M    | M    | M    |
| 3   | MBMG 898    | Dissertation                       | 48 (0-144-0)                        | M    | M    | M    | M    | M    |

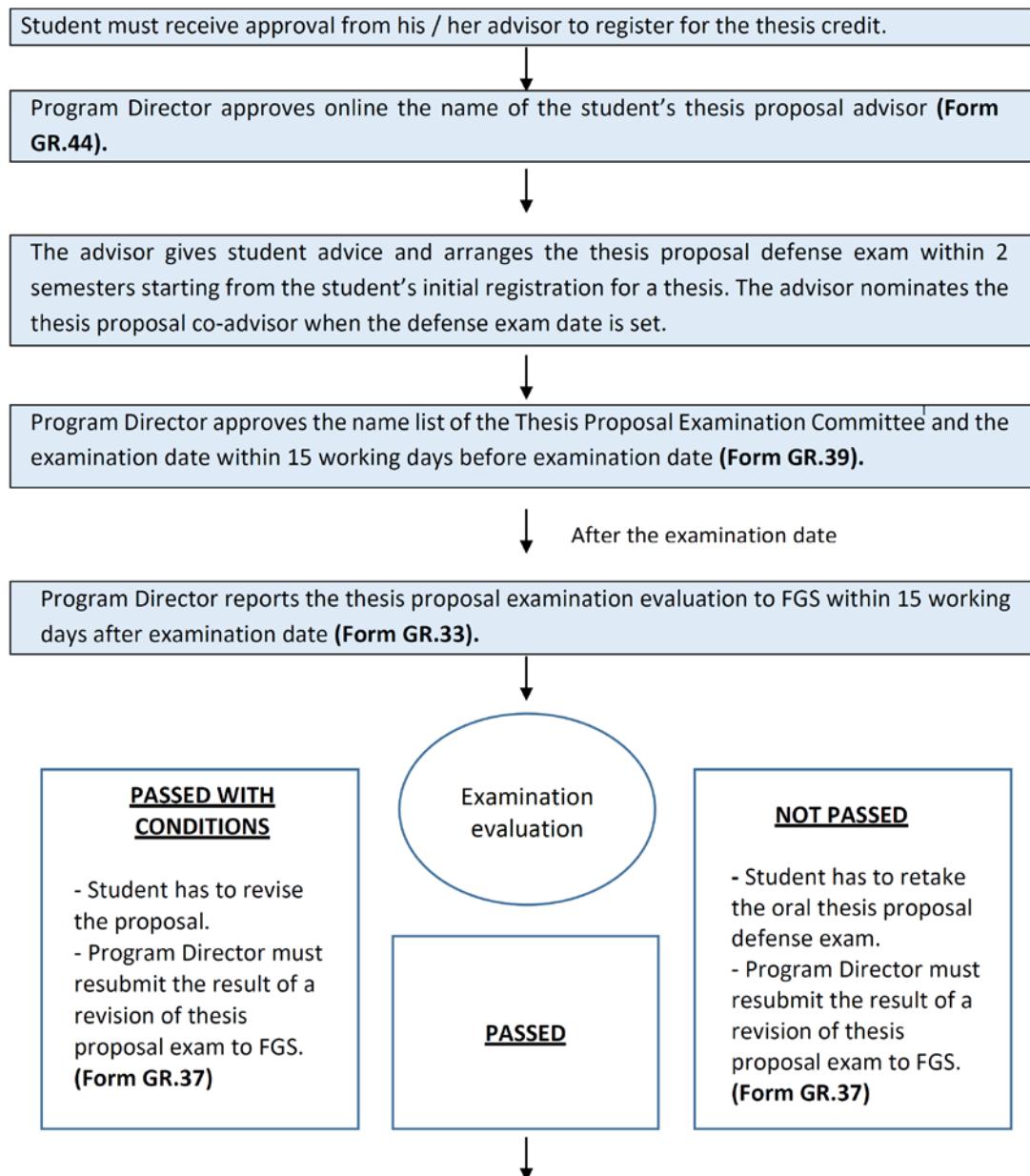
**Notes:**

I = ELO is introduced & assessed      R = ELO is reinforced & assessed

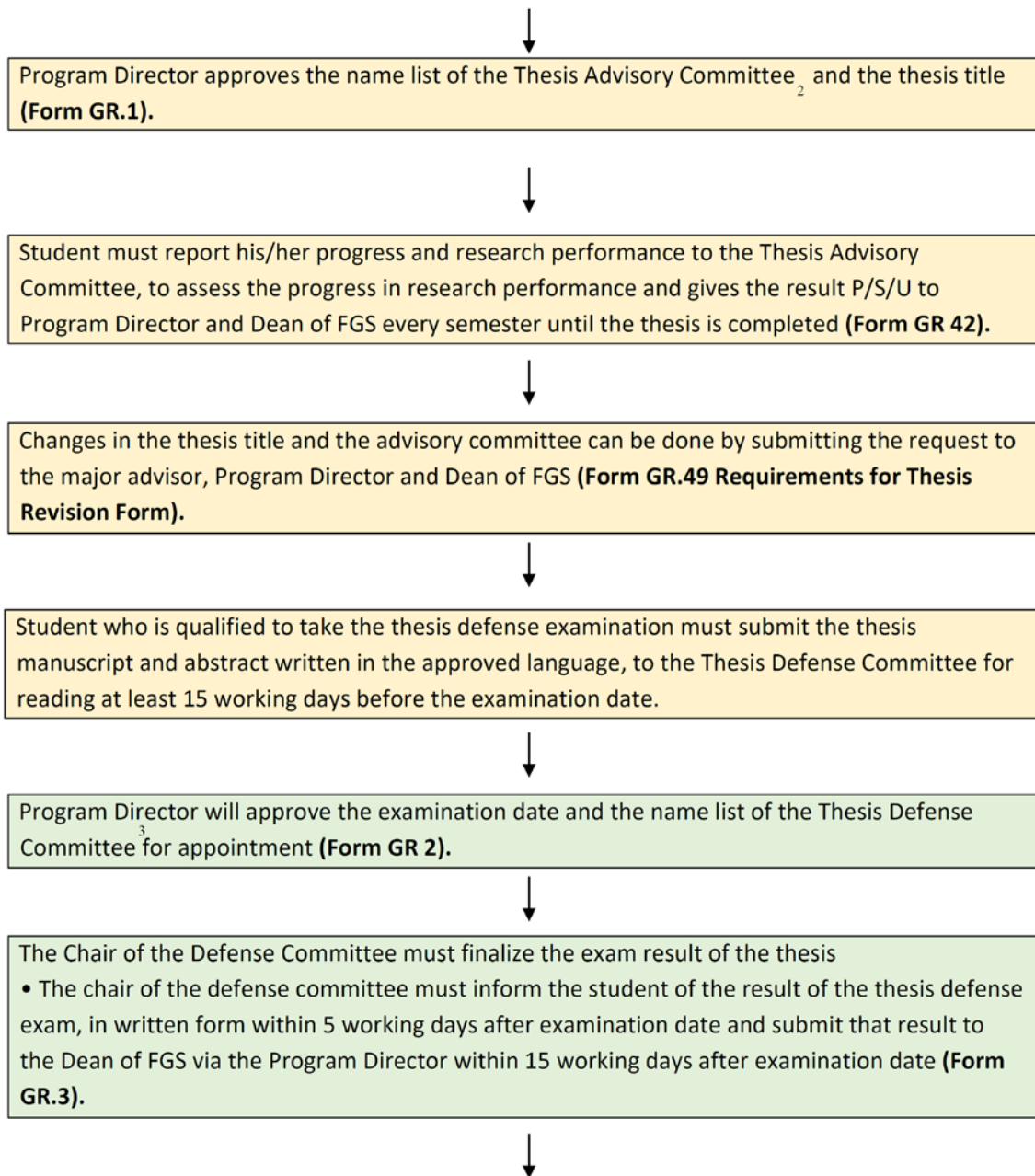
P = ELO is practiced & assessed      M = Level of Mastery is assessed

### 3.4 Students' Thesis Process

#### Steps for Thesis Process (Master's Degree Program)



<sup>1</sup> Number of committee members is at least 3 members, the chair of the committee must be a thesis proposal advisor, and the member must be a regular instructor or external examiner.



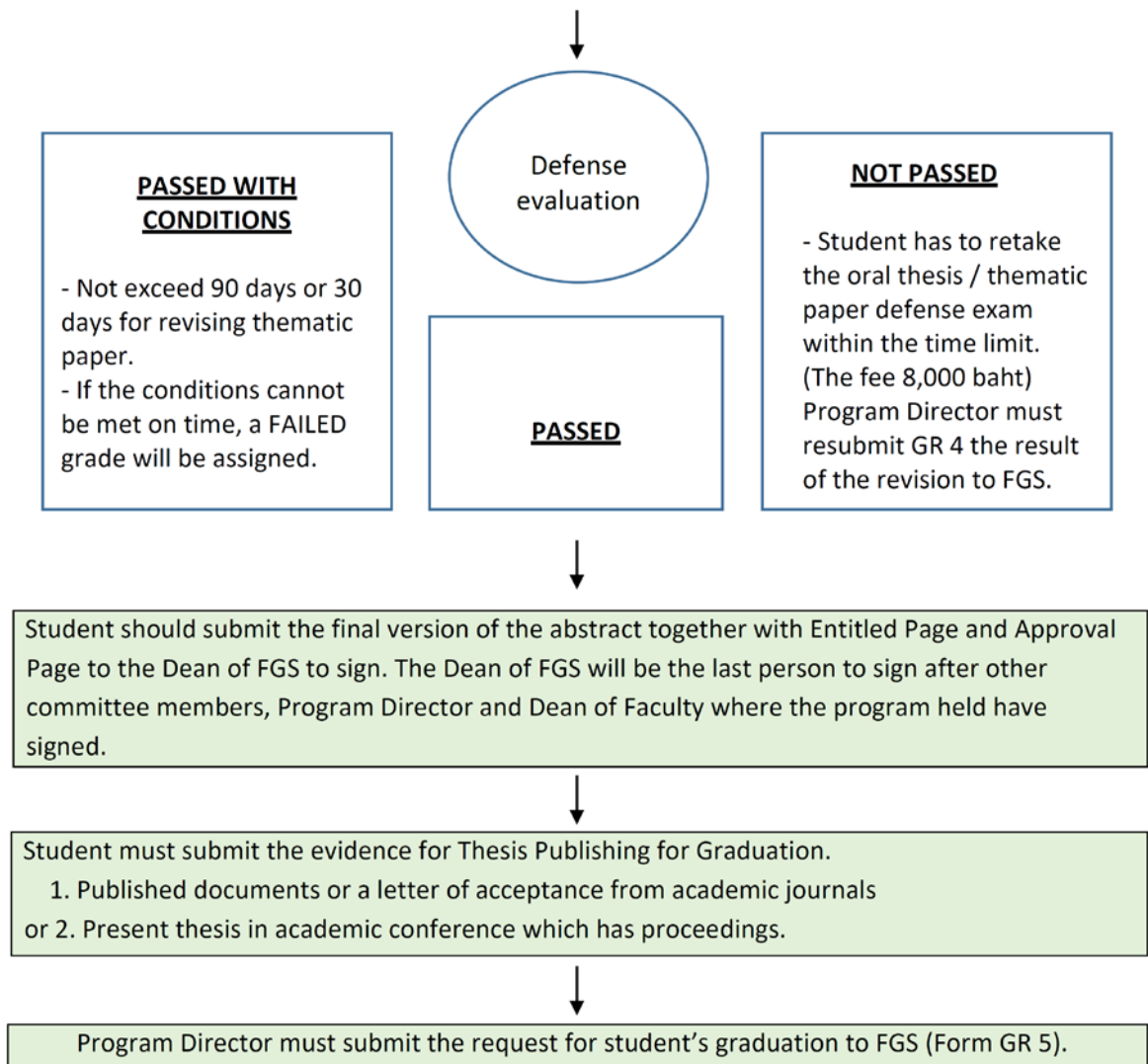
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<sup>2</sup> The Thesis Committee consists of at least 3 committee members

(1) major advisor (2) at least two co-advisors who are regular instructor or external person with Ph.D degree or have at least an academic title of no less than an associate professor.

<sup>3</sup> The Thesis Defence Examination Committee consists of at least 3 committee members (1) major advisor (2) at least one external examiner and (3) co-advisor or a program instructor.





### 3.5 Course Registration and Fee Payment for Graduate Students, Academic Year 2019 Faculty of Graduate Studies, Mahidol University

| No. | Registration Process Activities   | 1st Semester          | 2nd Semester               | Summer                |
|-----|---|-----------------------|----------------------------|-----------------------|
| 1   | Semester start-end dates  | Aug 13 - Dec 6, 2019  | Jan 6 - May 1, 2020        | May 25 - Jul 17, 2020 |
| 2   | Students meet the advisors to ask for course registration approval  | from Jul 8, 2019      | from Dec 2, 2019           | from May 4, 2020      |
| 3   | Registration at <a href="http://www.grad.mahidol.ac.th">http://www.grad.mahidol.ac.th</a>                     |                       |                            |                       |
|     | 3.1 Regular Registration  | Jul 8 - Jul 19, 2019  | Dec 2 - Dec 13, 2019       | May 4 - May 8, 2020   |
|     | 3.2 Regular Registration closed   | Jul 20 - Aug 12, 2019 | Dec 14, 2019 - Jan 5, 2020 | May 9 - May 24, 2020  |
|     | 3.3 Fee payment deadlines (before 11.00 pm)<br>(If payment is over due, students will be charged 2,000 baht.) | Aug 9, 2019           | Jan 3, 2020                | May 22, 2020          |
|     | 3.4 Late Registration   | Aug 13 - Aug 23, 2019 | Jan 6 - Jan 17, 2020       | May 25 - May 29, 2020 |
|     | 3.5 Payment for late registration   | Aug 10 - Sep 20, 2019 | Jan 4 - Feb 14, 2020       | May 23 - Jun 19, 2020 |
|     | * 3.6 Late payment of 2,000 baht  | Aug 13 - Nov 1, 2019  | Jan 6 - Mar 27, 2020       | May 25 - Jul 3, 2020  |
|     | 3.7 Add / Drop course Registration (Refund Graduate Tuition Fee Drop Course)                                  | Aug 13 - Aug 23, 2019 | Jan 6 - Jan 17, 2020       | May 25 - May 29, 2020 |
|     | 3.8 Submit Refund Graduate Tuition Form (AS-3-05) (For dropped course during Add / Drop period)               | Aug 13 - Sep 13, 2019 | Jan 6 - Feb 7, 2020        | May 25 - Jun 19, 2020 |

| No.  | Registration Process Activities   | 1st Semester  | 2nd Semester  | Summer  |
|------|---|---|---|---|
|      | 3.9 Add / Drop course Payment   | Aug 13 - Sep 20, 2019   | Jan 6 - Feb 14, 2020  | May 25 - Jun 19, 2020   |
|      | 3.10 Course withdrawal (no refund)  | Aug 24 - Nov 29, 2019 or until the week before the final exam | Jan 18 - Apr 24, 2020 or until the week before the final exam | May 30 - Jul 10, 2020 or until the week before the final exam |
| 4    | Advisor or Program director give approval for each student  | within 7 days after receiving student registration request    |   |   |
| 5    | Registration staff will send invoice and course list via e-mail to each student. The students can download and print out the invoice to make each payment at the bank counter or electronic payment |   |   |   |
|      | 5.1 Regular Registration  | 12 days after receiving student registration request          |   |   |
|      | 5.2 Late Registration   |   |   |   |
|      | 5.3 Add/ Drop Course Registration   |   |   |   |
| 6    | Announcement of student enrollment's list and payment status at <a href="http://www.grad.mahidol.ac.th">http://www.grad.mahidol.ac.th</a> (e-registration)  | from Jul 22, 2019   | from Dec 16, 2019   | from May 18, 2020   |
| 7    | Students who do not register and/ or do not pay the fee must contact the Academic Services Section, Salaya to confirm the student status  | Sep 23 - Oct 11, 2019   | Feb 17 - Mar 6, 2020  | -   |
| 8    | Students status terminated due to non-registration and/ or nonpayment of fees   | Oct 29, 2019  | Mar 20, 2020  | -   |
| ** 9 | e-registration closed   | Nov 25 - Dec 1, 2019  | Apr 27 - May 3, 2020  | Jun 29 - Jul 5, 2020  |

| No. | Registration Process Activities  | 1st Semester          | 2nd Semester         | Summer                |
|-----|--|-----------------------|----------------------|-----------------------|
| 10  | Students give comments on the Online Course Evaluation Form  | Nov 11 - Dec 23, 2019 | Apr 6 - May 18, 2020 | Jul 27 - Aug 17, 2020 |
| 11  | Program directors submit evaluation of student's achievement in each course to FGS.  | within Dec 27, 2019   | within May 22, 2020  | within Jul 24, 2020   |
| 12  | Announcement of Grade Report at <a href="http://www.grad.mahidol.ac.th">http://www.grad.mahidol.ac.th</a> (e-registration) | from Jan 6, 2020      | from May 27, 2020    | From Jul 30, 2020     |

Note

\* Student Download Invoice late payment fines of 2,000 baht from the system e-registration and pay at the bank specified in Invoice.

\*\*Registration may be allowed in person after online registration is closed by filling in the form AS-3-06.

### 3.6 Announcements



**Mahidol University**  
Institute of Molecular Biosciences

**Post-graduate Programs in Molecular Genetics and Genetic Engineering  
Institute of Molecular Biosciences  
Mahidol University**

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**Criteria for the change in M.Sc. student status**

The Institute Curriculum Committee has announced the following criteria for M.Sc. student who wishes to bypass to Ph.D. study program:

1. The student must attend at least a full year of course work and pass the required first-year course work which are: MBMG 500 Essentials in Molecular Biology, MBMG 512 DNA Engineering, MBMG 513 Gene Expression and Applications, MBMG 514 Protein Structure and Function, MBMG 515 Protein Technologies and Applications, MBMG 516 Cell Technologies and Applications and MBMG 615 Research Rotations in Molecular Biology
2. The change from M.Sc. to Ph.D. status must be made within one year after starting a research thesis, and must be approved by the Institute Curriculum Committee according to the following considerations:
  - 2.1 A reason for switching from M.Sc. to Ph.D. program.
  - 2.2 Demonstrated academic and research abilities. The student must have at least a GPA of 3.5 in the first year of course work.
  - 2.3 If the student has a scholarship under the major advisor's project, the student will not be allowed to change the thesis major advisor unless an agreement is made between the student and the major advisor.
3. The student must pass an interview by the examination committee which will be appointed by the chair of the Curriculum Committee. The student must contact the MGGE educational office at least 2 weeks in advance.

This announcement will be effective from April 4, 2018.

A handwritten signature in blue ink, appearing to read "P. Boonserm".

Assoc. Prof. Dr. Panadda Boonserm  
Program Director



**Mahidol University**  
Institute of Molecular Biosciences

**Post-graduate Programs in Molecular Genetics and Genetic Engineering**  
**Institute of Molecular Biosciences**  
**Mahidol University**

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**Guidelines for students' thesis research**

**M.Sc. students**

1. The student must complete the M.Sc. program within three years. The third-year student must appoint the thesis defense committee before the deadline for graduation of that academic year. The appointment for thesis examination date must be made before the advisor can submit thesis proposal for the next-year student.
2. The student must pass the Thesis Proposal Examination within the first semester after registered for the thesis.
3. At least 60% of the student's research time must be carried out at the Institute.
4. Each student must be evaluated for the progress of his/her research every semester.
5. The M.Sc. thesis or part of it must be presented at the conference with a peer review process and have a full proceeding (with the student's name as the first author and the major advisor as a corresponding author) or published in a peer-reviewed international journal (with the student's name as an author and the major advisor as the first or corresponding author).
6. A student can submit his/her thesis for publication only after his/her thesis topic has been approved by the Faculty of Graduate Studies.

**Ph.D. students**

1. The student must pass the Qualifying Examination within two semesters (for students with a Master's degree) or four semesters (for students with a Bachelor's degree) after officially enrolled.
2. The student must pass the Qualifying Examination before being allowed to register for Thesis.
3. The student must take the Thesis Proposal Examination within two semesters after registered for the thesis.
4. Students with a Master's degree cannot take more than 4 years and students with a Bachelor's degree cannot take more than 6 years to complete their study.
5. At least 60% of the student's research time must be carried out at the Institute.
6. Each student must be evaluated for the progress of his/her research thesis every semester. This evaluation may be omitted during the period of student's overseas training with the consent from the Administrative Program Committee. This omission will be allowed only once in the entire period of Ph.D. thesis.
7. Publication for graduation of Ph.D. students must have student's name as the first author and the thesis major advisor as a corresponding author (For the first publication: student's name as the first author and major advisor as the corresponding author, For the second publication: student's name as the first author and major advisor as the corresponding author or co-author). Student can take the Thesis Defense Examination when at least one publication is accepted for publication. The publication must be related to the thesis, and the date of publication must be after taking the Thesis Proposal Examination.
8. A student can submit his/her thesis for publication only after his/her thesis topic has been approved by the Faculty of Graduate Studies.

This announcement is to be effective from April 4, 2018.

Assoc. Prof. Dr. Panadda Boonserm



Program Director

**Mahidol University**  
Institute of Molecular Biosciences

**Doctor of Philosophy program in Molecular Genetics and Genetic Engineering**  
**Institute of Molecular Biosciences**  
**Mahidol University**

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**Qualifying Examination**

**Objectives**

The purpose of the qualifying examination is to assess whether the student has adequate knowledge in the field of study to begin a Ph.D. thesis research. This will be determined by testing both fundamental knowledge related to the student's research and the oral communication skill.

**Prerequisite**

Students who wish to take qualifying examination must complete all the first-year course work.

**Format**

Students will be tested on fundamentals of their research field. The examination will be composed of a 30 minutes student's presentation on the research background and literature reviews followed by a questioning session from the Qualifying Committee and participating faculty members.

Before the exam, the students must

1. notify their intention to take the qualifying exam and appoint the exam date with the program director one month in advance. The Qualifying Examination Committee, composing of four faculty members for each student, will be appointed by the program director for each student.
2. submit the abstract (not exceed 250 words) and copies or PDF of at least three research articles to each committee member two weeks ahead of the exam.

**Evaluation**

The examination will be evaluated by the Qualifying Committee, and the student will be informed of the result after the exam.

Students who do not pass the exam must retake the exam within six months with the same Qualifying Examination Committee. Students who fail the second qualifying examination will be retired or will be asked to change the status from Pd.D. to Master's student.

This announcement will be effective from July 21, 2017

A handwritten signature in blue ink, appearing to read 'P. Boonserm'.

Assoc. Prof. Dr. Panadda Boonserm  
Program Director



**Mahidol University**  
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**Post-graduate Programs in Molecular Genetics and Genetic Engineering  
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Mahidol University**

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**Criteria for Evaluating Students' Studies**

This is to inform all MGGE students of the decision made by the Graduate Programme Committee from the meeting on May 3, 2016. The establishment of criteria for evaluating students' studies is intended to maintain a high standard of the programme in Molecular Genetics and Genetic Engineering.

The criteria are as follows:

1. Students who have attended class regularly and taken examinations, or unreasonably missed the final test will be graded as a normal rating and will not receive an "I" (Incomplete).
2. In the case of MGGE scholars, if they have received a grade lower than "B" for a required course, their scholarships will be terminated and consequently
  - 2.1 they must pay graduate tuition at a normal rate of 18,000 ฿ per credit for the following semester;
  - 2.2 they must pay the Research Supplies Fee of 150,000 ฿ for a research M.Sc. thesis;
  - 2.3 they must pay the Research Supplies Fee of 300,000 ฿ for a research Ph.D. thesis.
3. Students who could not pass a required course after the second attempt will be terminated from the programme.
4. Students who have received a grade lower than "B" for two required courses will not be allowed to perform the thesis research.
5. Students who have received a "U" rating for two semesters of the research performance must withdraw from the programme.
6. Changing of the above criteria can only be performed by the Graduate Programme Committee.

This announcement will be effective from July 21, 2017.

Assoc. Prof. Dr. Panadda Boonserm  
Program Director



### 3.7 Laboratory guidelines

Your actions and behavior in the laboratory should reflect an attitude of professional concern and commitment to excellence. Cooperation and communication with your colleagues is essential. We will all learn more if we work in an atmosphere of cooperation rather than competition. Materials, supplies, and equipment are often limited so use only what is needed. Please return supplies to their proper places as soon as you have finished with them.

1. Laboratory coats must be worn in the radioactive laboratory and should be worn while performing any bench work.
2. Gloves may be contaminated so do not wear them to answer the telephone or to open a door while walking through the Institute.
3. Closed-in shoes must be worn in the laboratory.
4. Equipment must not be used until you have been properly trained in its use.
5. Special permission must be obtained to work outside the normal working hours of Monday - Friday 0800-2000 hr.
6. Eating and drinking are NOT allowed in the laboratory.
7. In the laboratories performing genetic manipulation experiments, the windows and doors must remain closed to prevent cross-contamination.
8. If equipment is broken or reagents consumed, please inform the appropriate people.
9. The computers must only be used for research purposes and NOT for playing games.
10. When borrowing equipment or reagents from other laboratories, please inform people in that laboratory BEFORE taking the material.
11. Return the material that you borrowed to the laboratory from where it came.
12. Students must be dressed politely when attending courses.
13. Dishonesty and unethical behavior including plagiarism and fraudulent manipulation of data will not be tolerated.
14. Students breaking the above rules are subject to dismissal from the program.

### 3.8 Professional and Personal Skills Development

At present, it is widely accepted that successful students both in work and personal life have some knowledge they acquire outside of school. Since Professional and Personal Skills Development or Soft skills are as important as the knowledge in school, the dean of the Faculty of Graduate Studies, with the approval of the Faculty of Graduate Studies policy committee, saw it beneficial to provide Soft Skills development to students in the graduate programs in order to comply with the Faculty of Graduate Studies' strategies that develop the graduates' qualities to meet the international standards. The Deputy Dean for Student Affairs formed the student affairs committee consisting of representatives of all sections to set up Soft Skills development guideline under the project – Professional and Personal Skills Development.


The standard professional and personal skills required for the graduate students in Mahidol University are:

- 1. Language and Communication Skills**
- 2. Leadership and Management Skills**
- 3. Creative and Innovative Skills**
- 4. Information Technology Skills**

#### Policies

- Graduate students with student ID no. 61xxxx and later must pass the Professional and Personal Skills Development to qualify for graduation. Every candidate student must pass at least 1 activity in every required skills.
- The activity students take part in will be reported in their transcript.
- Students will get a certificate for every activity attended.
- Students can register for the activities through the website at [www.grad.mahidol.ac.th](http://www.grad.mahidol.ac.th) which will have a schedule of activities for the students to choose.
- The maximum of comparable skills in the students' program are 4 skills, one of which the student shall take in the Faculty of Graduate Studies.

### 3.9 Appeal Procedure




**Mahidol University**  
Institute of  
Molecular Biosciences

## Complaints and Appeals Process

Institute of Molecular Biosciences

### Complaint/Appeal relates to the following:

1. Academic/Support staff
2. Graduate Programs/ Services
3. Comments/suggestion



### Complaints/Appeals Form contains:


1. Name, Surname, Address, telephone number
2. Complaint/Appeal issue
3. Polite contents
4. Signature at the end of the form

### The following items will not be considered:

1. Thailand's monarchy
2. Policy of the Thai Government
3. Judicial process
4. No signature/ Items that cannot be traced
5. Complaints that have already been considered by the Government

### Procedures

1. Obtain Complaints/Appeals Form from the MB Legal Affairs Division or download from the MU Legal Affairs Division website
2. Submit the signed completed form by post or e-mail **Or**
3. Submit the form in MB Suggestion Box at the **1st floor in front of the meeting rooms or the 3rd floor in front of the library**



**WE  
EMB**

For more information, please contact  
Ms.Issariya Dissariyawongwarang Ext. 1451

### 3.10 Course Schedule 2019

Molecular Genetics and Genetic Engineering Program Course Schedule 2019

| Course (coordinator)   | Aug   | Sept                                   | Oct                                  | Nov | Dec                                  | Jan                                 | Feb                             | Mar                              | Apr                              | May |
|--|---|--|--------------------------------------|-----|--------------------------------------|-------------------------------------|---------------------------------|----------------------------------|----------------------------------|-----|
| MBMG 500 Essentials in Molecular Biology (Apinunt)                     | 5 Aug - 2 Sep<br>Mon, Tue, Thu:<br>9.00-15.30 |  |                                      |     |                                      |                                     |                                 |                                  |                                  |     |
| MBMG 512 DNA Engineering (Chalerrmporn)                                |   | 9 – 25<br>Sep<br>Mon-Fri<br>9.00-16.00 |                                      |     |                                      |                                     |                                 |                                  |                                  |     |
| MBMG 513 Gene Expression and Applications (Wipa/Kusol)                 |   | 30 Sep – 25 Oct<br>Mon-Fri 9.00-16.00  |                                      |     |                                      |                                     |                                 |                                  |                                  |     |
| MBMG 514 Protein Structure and Function (Panadda)                      |   |  | 4 Nov – 22 Nov<br>Mon-Fri 9.00-16.00 |     |                                      |                                     |                                 |                                  |                                  |     |
| MBMG 515 Protein Technologies and Applications (Chartchai)             |   |  |                                      |     | 2 - 18 Dec<br>Mon-Fri:<br>9.00-16.00 |                                     |                                 |                                  |                                  |     |
| MBMG 516 Cell Technologies and Applications (Saovaros)                 |   |  |                                      |     |                                      | 2 -24 Jan<br>Mon-Fri:<br>9.00-16.00 |                                 |                                  |                                  |     |
| MBMG 615 Research Rotations in Molecular Biology (Poochit)             |   |  |                                      |     |                                      |                                     | Rotation I<br>3 Feb – 28<br>Feb | Rotation II<br>2 Mar – 27<br>Mar | Rotation III<br>30 Mar-24<br>Apr |     |
| MBMG521, 522 Mol Genet & Genet Eng Seminar I, II (Sarin, Kanokporn)    | To be announced<br>Fri: 10.00-11.30           |  |                                      |     |                                      |                                     |                                 |                                  |                                  |     |
| MBMG601 Current Topics in Mol Biol (Duangrudee)                        |   |  | 2 Oct-27 Nov<br>Wed: 9.30-11.30      |     |                                      |                                     |                                 |                                  |                                  |     |
| MBMG504 Adv Res Skill in Mol Biol (Chalerrmporn)                       |   | 5 Aug – 29 Nov                         |                                      |     |                                      |                                     |                                 |                                  |                                  |     |
| MBMG621, 622, 623 Doctoral Seminar (Kusol Albert, Duncan )             | To be announced                               |  |                                      |     |                                      |                                     |                                 |                                  |                                  |     |
| MBMG614 Analysis of Res Publication for Mol Biosci (Albert/Chalongrat) |   | 8 Aug – 28 Nov<br>Th: 10.00-12.00      |                                      |     |                                      |                                     |                                 |                                  |                                  |     |
| MBMG 610 Innovation in Research (Surapon)                              |   |  |                                      |     |                                      | 6 Jan – 27 Apr                      |                                 |                                  |                                  |     |

SCID500 Cell Mol  
Biol  
27 Jun - 2 Aug,  
2019  
Mon-Fri: 9.00-12.00

M.Sc./Yr 1

M.Sc./Yr 2

Ph.D.



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