Rules of Procedure for the MSc "IMMUNOBIOLOGY"

ARTICLE 1

General Provisions

The Postgraduate Programme in **"Immunobiology**" is organized and operated by the Department of Biology of the University of Crete from the academic year 2024-2025 (hereafter referred to as the Programme or the Postgraduate Programme) in accordance with the provisions of this regulation and the provisions of Law 4957/2022. The MSc may enter into cooperation agreements with research institutions, other academic organizations, etc., for the realization of its objectives, following decisions of the Steering Committee (SC).

The structure, organisation and operation of the postgraduate studies of the MSc are governed by the provisions of the relevant laws, by the applicable decision approving its operation, by the Internal Regulations of the University of Crete and by these Regulations of the MSc.

The language of instruction is English.

ARTICLE 2

Postgraduate Degree

The MSc in **"Immunobiology"** awards a Diploma of Postgraduate Studies (MSc) in **"Immunobiology"** of 120 credit units (ECTS), corresponding to level seven (7) of the National and European Qualifications Framework for Lifelong Learning and the Qualifications Framework of the European Higher Education Area.

The total number of ECTS as well as the degree will be indicated on the diploma awarded. The diploma is awarded by the University of Crete and is co-signed by the Rector of the University of Crete, the President of the Department, and the Head of the Secretariat of the Department of Biology.

ARTICLE 3

Subject-Objective-Purpose-Learning Outcomes-Results-Requirements

The Department of Biology of the University of Crete offers a postgraduate programme entitled **"Immunobiology"** with the participation of lecturers from other departments of the University of Crete (School of Medicine, Department of Chemistry, Department of Materials Science and Engineering), other Greek Universities (University of Patras, Aristotle University of Thessaloniki), as well as the Foundation for Research & Technology.

The aim of the MSc is to provide graduates with an advanced understanding of the immune system and its functions. This field of study delves into the biological and biochemical mechanisms used by the immune system to protect the organism from pathogens, as well as its role in disease, disorders and therapeutic or defensive interventions, and spans from mammals to plants. The main objectives of the MSc programme are:

- **Fundamental Knowledge:** to deepen the understanding of the fundamental principles of immunology, including the cellular and molecular processes that underpin innate and acquired immunity.

- **Research skills:** Develop practical and analytical skills necessary to conduct scientific research. This includes learning techniques for studying immune responses, handling biological data and using advanced laboratory equipment.
- **Critical Thinking:** to enhance critical evaluation skills of current research and literature in immunobiology, facilitating the understanding of cutting-edge issues and technological advances in the field.
- **Understanding Disease**: studying the role of the immune system in health and morbidity, and understanding the mechanisms by which the immune response may contribute to the pathogenesis of diseases, including autoimmune diseases, allergies and cancer.
- **Therapeutic Applications:** Investigating the development of immunological approaches for disease prevention and treatment, such as vaccines and immunotherapies.
- **Professional Skills:** Preparing students for professional roles in academic research, biotechnology and pharmaceutical industry, clinical application, and general positions requiring expertise in immunobiology.
- **Ethical and social implications**: discuss the ethical, legal and social implications of research in immunobiology, particularly in relation to new and emerging technologies such as genetic engineering and personalized medicine.

Overall, graduates of the MSc in Immunobiology programme are expected to emerge as individuals with deep knowledge and expertise, well prepared to make significant contributions to the field of immunology and related fields.

Graduates can be employed in positions related to their specialization, either in the public (hospitals, secondary education, municipalities, etc.) or private (diagnostic laboratories, pharmaceutical companies, etc.) sector or they can continue in academic- research careers in Universities or Research Organizations.

ARTICLE 4

Duration of the Programme

The MSc will operate at least until the academic year 2029-2030 with the possibility of extension, subject to its non-certification during the periodic evaluation of the Department.

ARTICLE 5

Management bodies

According to Article 81 of Law 4957/2022, the competent bodies for the organization and operation of the MSc are:

1. The General Assembly of the Department of Biology of the University of Crete
2. The Steering Committee (SC) of the MSc.
3. The Director of the MSc.

The responsibilities of the institutions are defined as follows:

General Assembly of the Department of Biology of the University of Crete

The responsibilities of the General Assembly (GA) of the Department of Biology are defined according to article 30 of Law 4957/2022.

Steering Committee (SC)

The Committee of the Program consists of five (5) faculty members of the Department of Biology with a two-year term of office. The five-member Board of the program is composed of five members, including the Director of the MSc.

The SC of the Programme has the following responsibilities:

a) the monitoring and coordination of the operation of the Programme.

b) the preparation of an analytical report, at the end of the term of office of the Board, under the responsibility of the outgoing Director, on the research and educational work of the Programme, as well as on its other activities, with the aim of upgrading studies, better utilization of human resources, optimization of the existing infrastructure and the socially beneficial use of the available resources of the Programme.

Director of the MSc.

The Director of the MSc is a member of the Board and chairs it. He/she shall be appointed for a two-year term of office, renewable without limitation. He/she shall be a member of the teaching staff with priority at the rank of professor or associate professor.

The Programme Director may:

- recommend to the SC any matter relating to the proper functioning of the Programme and the effective implementation of these Rules
- appoint ad hoc committees for the organisation and operation of the Programme
- is responsible for the preparation of the agenda and the convening of the SC, as well as for the implementation of the decisions of these Bodies.

The Director shall not be entitled to any additional remuneration for his/her administrative work as Director.

Article 6

Duration of studies and organisation of the educational process

1. The duration of study for the award of the Diploma of Postgraduate Studies is set at four (4) academic semesters.

2. For exceptional reasons (e.g. for health reasons, etc.) a suspension of one (1) or two (2) semesters may be granted. During the period of suspension, the graduate student's rights are also suspended. The period of suspension shall not be counted towards the duration of study. Applications for extension or suspension of studies are accepted no later than two (2) weeks before the beginning of the teaching of the courses of the semester to which they refer, and are approved by the Board. Suspension of studies is not granted for the first semester of the MSc. In the case of an application for suspension of studies, the postgraduate student is obliged to have completed all financial obligations at the time of his/her application. Otherwise, he/she will be withdrawn. At the end of the suspension of studies, the postgraduate student shall return to the financial status in force during the last academic year of participation in the programme.

3. The courses of the MSc will be taught with physical presence at the University of Crete, but online teaching is possible, at a rate of 50% of the total teaching hours per course, if necessary, and after sufficient justification and approval by the SC for online teaching, the electronic infrastructure of the University of Crete e-class (https://eclass.edc.uoc.gr/) will be used, as well as the distance learning tools Microsoft Teams, Webex, ZOOM, etc.

4. Courses will be taught at predetermined dates and times following the timetable of the MSc. Students are required to attend all classes, as well as the activities of each course, to comply with the decisions of the Board and academic ethics. Absence from more than 3 lectures automatically results in failure of that course and the student is required to attend the course again in the next semester it is offered. Failure in a course is accepted only once, and in case of a second failure the student is expected to withdraw from the program. In the event that a student, due to a course exclusion, needs to enroll in an additional semester of study, the student will be charged the semester tuition fee.

5. The SC appoints an Academic Advisor for each student, who monitors the progress and advises the student during the programme.

6. There is no provision for the Programme to be offered on a part-time basis.

PART B

ARTICLE 7

Categories of graduates admitted to the MSc - Supporting documents & Selection Criteria

In the MSc **"Immunobiology"** are admitted and accepted upon selection holders of a first cycle degree of HEI (Higher Education Institutions) of the domestic or recognized institutions of foreign countries in the cognitive subjects of Biology, Medicine, Veterinary Medicine, Molecular Biology, Biochemistry and Biological Applications, Chemistry, Pharmacy, Chemical Engineering, as well as related subjects.

The announcement for the admission of new postgraduate students to the MSc for the acquisition of a Master's degree is announced to the interested parties by any appropriate modern means, following the recommendation of the Board of the MSc and the decision of the General Assembly of the Department of Biology, which should specify the following:

1. The necessary admission requirements.
2. The required documents for candidates for admission to the MSc.
3. The deadline for submission of supporting documents.
4. The method and criteria for evaluating candidates.
5. The e-mail address for submission of supporting documents.
6. Information about the programme, applications and the cost of the studies (relevant website).

As described in detail on the website of the MSc, according to the provisions of paragraph 2b of article 8 of the Regulation of Postgraduate Studies of the University of Crete, Government Gazette 5941-12/10/23, the necessary documents that candidates must submit are:

1. Application, on a special form available on the website of the MSc.
2. A detailed curriculum vitae accompanied by an analysis of interest/motivation for the MSc.
3. If available, copies of scientific publications, other qualifications other than the first degree, certificates of participation in research projects and scholarships/distinctions (scholarships, excellence awards, awards from scientific institutions, etc.).
4. At least two letters of recommendation, preferably from faculty members
5. Proof of B2 or higher in English language.
6. Photocopy of your identity card or passport.
7. One recent photograph (to accompany the application).

The SC may, if it deems necessary, request additional information from each candidate.

The following selection criteria are specified:

(a) the qualifications as shown by the supporting documents submitted:

- Bachelor’s Degree evaluation
- Grades in undergraduate courses, relevant to the subject of the MSc (such as average grade)

- Performance in the Diploma Thesis, where this is provided for in the first cycle of studies
- Research or professional activity related to the subject of the MSc.
- Publications
- Letters of recommendation

b) their performance during half-hour face-to-face oral interviews with 2 independent members of the programme, who may not be members of the Evaluation Committee.

c) their performance during oral interviews at the plenary session of the Evaluation Committee

Candidates' applications must be accompanied by the supporting documents required by the notice.

ARTICLE 8

Selection procedure - Evaluation of candidates

1. Every year, following the decision of the Departmental Assembly, a call for expressions of interest for the selection of students for the MSc is published by any appropriate means (including posting on the website of the relevant Department and the Foundation). The call specifies the criteria and the evaluation method through which the final grade of success is obtained, the deadlines for submission of applications and the supporting documents required.

2. The Departmental Assembly of the Department establishes a 10-member Committee for the evaluation of the candidates' applications (Evaluation Committee), which is chaired by the Director of the MSc and its members belong to the lecturers of the MSc. At the same time, the Departmental Assembly establishes a three-member Objections Committee, whose members are different from those of the Evaluation Committee. The Objections Committee is coordinated by the Director of the MSc.

The evaluation method includes a dossier evaluation, a personal half-hour interview with 2 independent members of the project and an interview in the plenary session of the Evaluation Committee.

3. The oral interview will take into account the results of two independent personal interviews of the candidate with two members of the Programme appointed under the responsibility of the SC, and an interview before the 10-member Evaluation Committee. The oral interview before the 10-member selection board. is conducted on matters of broader scientific interest and aims: a) to ascertain whether the individual interviews reflect the candidate's general qualifications and the image of the candidate as outlined in the letters of recommendation, b) to assess other characteristics of the candidate and c) to formulate (depending on the previous studies) a picture of the candidate's specific needs and particularities in case of admission (additional courses, etc.).

The final score is derived from the following algorithm:

(Degree grade*0.25) + (average personal interviews*0.15) + (average Evaluation Committee interview*0.6)

4. The decision on the number of admitted students and their order of success is taken by the Evaluation Committee of the Graduate Programme and confirmed by the Board.

5. In the event of a tie for an eligible place, all candidates are admitted or accepted in excess of the number of admission places set by the Evaluation Committee.

6. Cases of objections shall be examined by the EU on the basis of paragraph 2 of this Article. The Committee shall examine the file of the candidate or applicant and take the necessary steps to assess the objection. If the objection is upheld, the candidate shall be admitted to the programme in excess of the number of admission places set by the Evaluation Committee.

7. A prerequisite for final registration of candidates in the Graduate Program is the submission of a recognized degree or a certificate of completion of studies by October 15th of the same academic year.

8. The General Assembly of the Department may determine by its decision the definition of additional criteria, which are taken into account in the selection of postgraduate students and are mentioned in the announcement.

Article 9

Registration of Graduates

Successful students are informed by e-mail by the Secretariat of the MSc to which they have applied, the relevant forms are sent to them and they are invited to reply within ten (10) working days, whether or not they accept their admission to the MSc, accepting at the same time the terms of its operation. Failure by a selected candidate to reply within the above deadline, after a second notification 3 working days before the deadline, is equivalent to a refusal of acceptance. In the event of refusals, the Secretariat will inform the next in the evaluation order from the relevant list of successful candidates.

The registration of new students to the MSc is done one week before the beginning of the first semester.

ARTICLE 10

Programme of Studies, Language of Teaching and Dissertation Preparation

1. The total number of credits (ECTS) awarded by the MSc is 120 ECTS. A student may attend more courses (with the agreement of the lecturer of the course) if he or she wishes to do so. Additional courses do not count towards the degree and are indicated in the Diploma Supplement.

2. The indicative course programme is as follows (a brief description of the courses is presented in Annex I):

FIRST SEMESTER OF STUDIES			
CODE	**COURSE TITLE**	**TYPE OF COURSE Mandatory/Elective**	**ECTS**
IMM111	Immunity and the Immune System	M	7
IMM112	Microbial Pathogenicity and Infection	M	7
IMM113	Pathophysiology of the Immune System	M	5
IMM114	Therapeutic Immunology	M	3
IMM115	Experimental Approaches for the Study of the Immune System	M	8
TOTAL NUMBER OF CREDITS FOR THE FIRST SEMESTER			**30**

SECOND SEMESTER OF STUDIES			
CODE	**COURSE TITLE**	**TYPE OF COURSE Mandatory/Elective**	**ECTS**
IMM121	Experimental Immunology - Laboratory Training in Immunological Techniques	M	10
IMM122	Communication and Research Skills	M	5
IMM123	Collaborative Education - Group Discussions - *Journal Club*	M	5
IMM124	Research Proposal-Design of Research Protocol	M	5
IMM125	Laboratory Training-Practical Exercise 1	M	5
TOTAL OF CREDITS FOR THE SECOND SEMESTER			**30**
THIRD AND SECOND SEMESTER OF STUDY			
CODE	**COURSE TITLE**	**TYPE OF COURSE Mandatory/Elective**	**ECTS**
IMM211	Laboratory Training-Practical Exercise 2	M	5
IMM212	POSTGRADUATE WORK THESIS	M	55
TOTAL OF CREDITS FOR THE THIRD AND SECOND SEMESTER			**60**
TOTAL TOTAL			**120**

3. The course programme is indicative. The number, type and content of the courses of the curriculum, as well as their distribution in semesters, may be adjusted by decision of the Departmental Assembly in order to ensure the proper functioning of the programme.
4. The language of instruction is **English.** The language of the thesis is **English.**
5. All courses of the MSc will be conducted with physical presence at the University of Crete, but there will be, with the decision of the AC, the possibility of teaching by electronic means for modern distance education (online), in the courses of the first semester (30 ECTS) and in three courses of the second semester (15 ECTS) in a percentage of up to 50% of the total teaching time, if this is deemed necessary by the lecturer and there is sufficient justification. For the first semester (30 ECTS), students are given the opportunity for synchronous distance learning.

6. The courses of the MSc are taught during the days and hours specified in the timetable. They are obliged to attend all lectures, workshops and other activities provided for each course, as well as to respect and comply with the decisions of the institutions of the MSc, and academic ethics in general. Unjustified absences beyond 3 lectures will automatically lead to exclusion from the examinations of the corresponding course, and the student is obliged to attend the course in the next corresponding semester. This right can be exercised twice, after which the student will be deleted. In case the student, due to a course exclusion, needs to register for an additional semester of study, he/she will be charged the semester attendance fee.

7. When assessing a course, participation, performance in homework, assignments and examinations, or other parameters (e.g. laboratory exercise, oral presentation) are taken into account depending on the obligations of the course. The exact method of assessment is determined by the coordinator of each course and communicated to students before the start of the course. Instructors are required to issue exam results within a maximum of three (3) weeks from the day of the exam. If a course is taught by two or more instructors, the method of grading

shall be determined jointly. The examination procedures for the courses shall be approved by the Board, following a recommendation from the lecturers.

8. In the event of failure in the examination of a course or courses, an NF has only one opportunity to retake the examination in the following September.

9. The grade in each course is given on a decimal scale from 0 to 10 with grades of 0.5. To be considered a pass in a course, a grade of at least Seven (7.0/10.0) must be achieved. A degree is awarded when the average grade for the course (including the Master's thesis) is at least seven (7.0/10.0). The final grade for the Master's Degree is calculated as the weighted average of the credits for all courses and the required Master's thesis.

10. The Board of Directors appoints for each postgraduate student a faculty member from the teaching team of the MSc as a supervisor/advisor for the monitoring and control of the progress of the student's studies.

11. The postgraduate research project corresponds to 55 ECTS and is carried out during the 3rd and 4th semesters, has a research orientation and is supervised by a three-member committee. The committee, which includes the main supervisor of the research master thesis, consists of faculty members or researchers serving at the University of Crete. Researchers from recognized research/university institutions (other than collaborating institutions) in Greece and abroad who hold a PhD degree may be appointed as co-supervisors of the postgraduate student. The members of the Committee must have the same or a related scientific specialization as the subject of the postgraduate thesis.

11.1 Applications for a postgraduate research project may be submitted by those who have accumulated 60 ECTS.

11.2 The procedure for the preparation of postgraduate research projects in case of approval by the Board is as follows:

α) With the agreement of the supervisor concerned, the Board approves the subject and the three-member examination committee.

b) At the end of the writing process, the time of presentation/examination of the thesis is announced, with the agreement of the three-member examination committee.

c) The postgraduate research thesis is submitted electronically to the members of the three-member examination committee. The submission must be made no later than ten (10) working days before the examination. The examination process can only proceed if all members of the examination committee agree. Any objections must be raised no later than 2 working days before the examination.

11.3 The postgraduate research thesis is evaluated by the three-member examination committee in terms of its originality, its research achievements, the presentation of the literature review, the scientific methodology, the research framework and perspective, the execution and analysis of the results, as well as the manner of presentation. The process concludes with an evaluation of the oral presentation and responses to questions. At the end, the Master's thesis is judged as "satisfactory" or "unsatisfactory".

11.4 If the thesis is judged as "unsatisfactory", the PI must make the necessary corrections/improvements according to the committee's recommendations. A second examination shall then follow on a date to be determined by the members of the examination committee and within a maximum of six (6) months from the first examination. If it is still deemed

"unsatisfactory", no third opportunity will be given. In this case, the PM will not receive a postgraduate degree, but a detailed certificate of successful completion of postgraduate courses.

ARTICLE 11

Graduation and Postgraduate Qualifications

The graduation of all students after the successful completion of the postgraduate research thesis takes place in a special ceremony at the University of Cyprus, which takes place every July in the presence of the Rectoral Authorities, the Deans of the Faculties and the Directors of the Postgraduate Programmes. The postgraduate diploma is signed by the Rector, the President and the Secretary of the Department and is accompanied by a Diploma Supplement signed by the President of the Department of Biology.

ARTICLE 12

Number of applicants

The maximum number of admissions per year is 15 postgraduate students. Students from European Economic Area and non-EU countries will be admitted to the programme.

ARTICLE 13

Sources of funding - Tuition fees

1. The sources of funding for the MSc may be:

α. Tuition fees
β. Donations, sponsorships and financial aid of any kind
c. Bequests
δ. Funds from research projects or programmes
ε. Own resources of University of Crete
f. The state budget or public investment programme

2. Participants of the MSc pay a tuition fee of 1.000 €/semester of study. The total tuition fees of the MSc amount to 4.000 €. Tuition fees are payable on the first 15 days of the first semester. The payment is made to a bank account indicated by the managing body of the University of Crete, which is responsible for the administrative support of the project.

3. In case the student is unable to pay the tuition fees within the period of time provided for in the above paragraph, he or she submits a request for an extension of the payment period for reasons that he or she justifies adequately, and the General Assembly of the Department, after a recommendation of the Steering Committee, decides on this matter.

4. Provided that there is an influx of other funding sources, the SC reserves the right to reduce the tuition fees horizontally and/or to grant additional scholarships in the form of tuition fee reductions to students selected by the SC, following academic excellence criteria. Finally, postgraduate students are exempted from the payment of tuition fees if they meet the requirements of Article 86 of Law 4957/2022. The submission of the relevant application and the necessary supporting documents should be made after the completion of the selection process

of the MSc students, on dates to be determined by the announcement of the admission of new students. Those who receive a scholarship from another source are not entitled to an exemption or additional scholarship. In any case, the exempted students may not exceed thirty percent (30%) of the number of students admitted to the MSc. If the beneficiaries exceed 30%, they shall be selected in rank order starting with those with the lowest income.

ARTICLE 14

Rights and Obligations of students

Postgraduate students have the rights and the corresponding obligations arising from the applicable legislation, the Internal Regulations of the University of Crete, the provisions of the Regulation of Postgraduate Studies Programmes of the University and the decisions of the competent university administration bodies.

1. Rights

1.1. The students from the EU are entitled to all the benefits of undergraduate students, as defined by article 284 of Law 4957/2022 (meal card, student ticket, reduced costs of participation in cultural-entertainment events, insurance through the University, etc.), except for the right to free textbooks.

1.2 The University is obliged to ensure that students with disabilities and/or special educational needs have accessibility to the proposed texts and teaching.

1.3 The MSc may award scholarships to students based on selection criteria. Scholarships are granted subject to the availability of funds. The number of scholarships to be awarded by the Programme each year will be determined by a decision of the Board. The selection of scholarship holders will be made by the SC on the basis of the ranking list of admitted students, criteria of academic excellence, and/or their performance during the first semester of their studies.

1.4. Students may be employed in research projects of faculty members and researchers of the University of Crete and other institutions participating in the MSc and receive a stipend from them (in this case they will not receive a second stipend).

2. Obligations

2.1 The graduate students are obliged to complete within the deadlines set:

(a) their enrolment in the MSc.

(b) the payment of registration fees.

2.2. Students are required to submit their applications for extension or suspension no later than two (2) weeks prior to the start of classes for the semester to which they apply.

2.3. The graduate students are obliged to attend the postgraduate courses and carry out their research work.

2.4. The graduate students are obliged to attend the scheduled examinations.

2.5. The graduate students are obliged to complete their studies within the prescribed time limits.

- 2.6. The graduate students are obliged to respect and comply with the decisions of the bodies of the MSc as well as academic ethics.

ARTICLE 15

Deletion from the MSc.

1. A student who:

(a) exceeds the maximum permitted period of attendance, in accordance with Article 6(1) and (2) of this Regulation

(b) is absent for an unjustified period of one (1) semester from his/her studies and obligations,

(c) completes two (2) failures in one or more courses,

(d) fails to pay its registration fees within the prescribed period of time under Article 13(2) and (3) of these Regulations.

2. Students who are withdrawn from the programme are entitled to receive a detailed certificate of successful completion of the postgraduate courses they have completed.

3. Participation in copying or generally tampering with the examination procedure of a postgraduate course or the writing of a postgraduate thesis, plagiarism in the postgraduate thesis or in a course topic, entails deletion from the MSc after a relevant decision of the Departmental Assembly, as provided by Article 198 par. 1 of Law 4957/2022. In the same cases, the postgraduate diploma is withdrawn when the violation is established after graduation.

ARTICLE 16

Scholarships and awards

The MSc may grant to its students scholarships for excellence and awards, at the expense of its budget, based on their performance in their studies and their individual or family financial situation, as well as reciprocal scholarships. The competent body for determining the number of scholarships and prizes, the criteria for awarding them and any other relevant matters is the Departmental Assembly.

ARTICLE 17

Evaluation of the MSc.

An evaluation of the quality of the educational work, the courses and the lecturers of the MSc is carried out every academic semester under the responsibility of the Board in collaboration with the Department's OMEA., and its results are included in the annual internal evaluation report.
The Programme will be evaluated in the framework of the periodic evaluation/certification provided for in article 87 of Law 4957/2022 by the National Authority for Higher Education. In this context, the overall assessment of the work carried out in the MSc, the degree of fulfilment of the objectives set at its establishment, its sustainability, the absorption of graduates in the labor market, the degree of its contribution to research, the internal evaluation of the programme by postgraduate students, the feasibility of extending its operation, as well as other elements relating to the quality of the work produced and its contribution to the national strategy for higher education, will be evaluated.
The Internal Evaluation Committee is responsible to the SC for the overall evaluation of the programme and the submission of proposals to the Board, as well as for the evaluation of the

courses by the students, the preparation of the reports of the lecturers in the programme and the preparation of the Internal Evaluation Reports concerning the HEAE. In order to achieve its objectives, the Evaluation Team of the MSc cooperates with all relevant departments.
During the teaching of a course, the postgraduate students evaluate it anonymously by completing a questionnaire administered to them according to a procedure defined by the P.C. The relevant form is prepared according to the requirements of the HAHE (Hellenic Authority for Higher Education) and covers the course in terms of content, teaching method, the degree of correlation with the principles and philosophy and the objectives of the MSc, and is approved by the SC.
The evaluation of the lecturers of the MSc by the students is carried out at the end of each semester. The analysis of the evaluation results with the comments of the students are prepared under the responsibility of the Internal Evaluation Committee of the MSc. The final evaluation table with any comments as well as a comparative table of courses are brought to the attention of the SC and communicated to the lecturers.
At the beginning of each academic year, the SC examines the results of the evaluation and the proposals of the Internal Evaluation Team and takes measures to improve the programme where appropriate.
The Department reserves the possibility to carry out an additional evaluation of the MSc, asking for the opinion of colleagues from abroad who are not actively involved in its operation.

ARTICLE 18

Other Arrangements

Any matters not covered by this Decision shall be dealt with by the competent bodies in accordance with the applicable legislation.

ANNEX I
BRIEF DESCRIPTION OF THE COURSE

IMM111. Immunity & Immune System

Duration: 4 weeks (3 weeks tutoring, 1 week evaluation), ECTS: 7
Prerequisite Courses: Cell Biology, Biochemistry, Molecular Biology
Learning Outcomes: Upon completion of the course, the graduate students are expected to:

- Have acquired the basic knowledge in immune system histology
- Have acquired the basic knowledge on molecular immune players
- Understand functioning of the immune system
- Be able to expand the mammalian immune to birds, fish and reptiles

Syllabus

- Properties and Overview of Immune Responses
- Cells and Tissues of the Immune System
- Innate Immunity
- Adaptive Immunity
    - Lymphocyte Development and Antigen Receptor Gene Rearrangement
    - Antibodies and Antigens (Immunoglobulins: protein and gene structure and function) -
    - Antigen Presentation to T Lymphocytes and the Functions of Major Histocompatibility Complex Molecules
    - Immune Receptors and Signal Transduction
    - Activation of T Lymphocytes
    - Differentiation of myeloid and lymphoid cells
        - Differentiation and Functions of CD4 + Effector T Cells
        - Differentiation and Functions of CD8 + Effector T Cells
    - Cytokines - (non-specific response, function, receptors, synergies, cross-talk, signaling)
- Avian immune system
- Fish immune system

Bibliography

Abul K. Abbas, Andrew H. Lichtman, Shiv Pillai. Cellular and Molecular Immunology
ISBN: 9780323757485, ISBN: 9780323757508

IMM112. Microbial Pathogenesis & Infection

Duration: 4 weeks (3 weeks tutoring, 1 week evaluation), ECTS: 7
Prerequisite Courses: Cell Biology, Biochemistry, Molecular Biology
Learning Outcomes: Upon completion of the course, the graduate students are expected to:

- Have acquired the basic knowledge in bacterial and viral biology
- Being able to diagnose bacteria and viruses
- Understand bacterial and viral pathogenesis
- Understand how the immune system fights against bacteria and viruses

Syllabus

- Bacteriology:
    - The bacterial cell
    - Nutrition, growth and energy metabolism
    - Genetics

    - Identification, taxonomy
    - Antibiotics and resistance
    - Pathogenesis and immunity
- Virology:
    - Definitions, classification, morphology
    - Structure and function of viral nucleic acids
    - Viral proteins and genetics
    - Cell-virus interactions
    - Anti-viral therapy
    - Pathogenesis and immunity
- Parasites:
    - Definitions, classification, morphology
    - Pathogenesis and immunity

Bibliography

Microbiology and Immunology On-line, Hunt, R.C. editor. http://www.microbiologybook.org

IMM113. (Patho)Physiology of the Immune System

Duration: 4 weeks (3 weeks tutoring, 1 week evaluation), ECTS: 5

Prerequisite Courses: Cell Biology, Biochemistry, Molecular Biology

Learning Outcomes: Upon completion of the course, the graduate students are expected to:

- Familiarize with immune privileged sites
- Understand the tissue specific mechanisms underlining immunity
- Understand the failure of immune surveillance
- Learn how to choose model organisms to study specificities of the immune system
- Acquire in depth knowledge in immune system functioning through the study of thymus and immune memory, which consist the basis of immunity
- Understand how the immune system deals with infectious diseases
- Acquire in depth knowledge in innate immunity and the mechanisms that link innate to adaptive immunity
- Acquire the knowledge on the immunogenicity of blood groups
- Understand aging of the immune system
- Understand in depth the genetic background of autoimmunities
- Understand the different mechanisms that govern autoimmunities

Syllabus

- Mucosal immunity
- Neuro-immunology
- Reproductive Immunology
- Cancer Immunology
- Immunologic Tolerance and Autoimmunity
- Genetics of autoimmunities
- Immune Memory
- Immune senescence
- Gut microbiome – Nutrition
- Viral infections
- Stress
- Therapeutical approaches

IMM114. Therapeutic Immunology

Duration: 2.5 weeks (2 weeks tutoring, 0.5 weeks evaluation), ECTS: 3

Prerequisite Courses: Cell Biology, Biochemistry, Molecular Biology, Chemistry
Learning Outcomes: Upon completion of the course, the graduate students are expected to:

- Familiarize with immune system pathologies
- Learn the current therapeutic procedures
- Learn how to develop new therapies
- Understand the benefits and weaknesses of systems used in drug development

Syllabus

- Drug development
- Design and optimization of pharmaceutical compounds
- Vaccines
  - 1st and 2d generation vaccines
  - DNA vaccines
  - mRNA vaccines
  - edible vaccines
- Immunotherapies
  - Biological therapies (molecular, gene, cell therapies) -
- Polymeric nanocarriers, design and application to drug delivery
- Off-target effects, side-effects of bioactive compounds

IMM115. Research approaches for the study of the immune system

Duration: 5 weeks (4.5 weeks tutoring, 0.5 weeks evaluation), ECTS: 8
Prerequisite Courses: Cell Biology, Biochemistry, Molecular Biology, Genetics
Learning Outcomes: Upon completion of the course, the graduate students are expected to:

- Acquire the knowledge in the biology of model organisms in research
- Understand the different pathways that can be studied in model organisms
- Understand the rationale and state-of-the-art in ex vivo manipulation procedures including material exploitation and microfluidics in cell differentiation and tissue development
- Familiarize with basic principles of molecular biology at the gene and protein level
- Acquire knowledge on gene and protein manipulation
- Familiarize with novel technologies in the study of genes and proteins
- Get all necessary tools for the study of immune molecules
- Acquire the necessary knowledge on the state-of-the-art techniques to be used in answering the scientific questions cellular and molecular immunology.

Syllabus

- Gene structure, expression and function
- Experimental design, bioinformatics in molecular biology
  - Genome editing (zinc-finger nucleases, TALENs, CRISPR/Cas9)
  - Transcription factor families and chromatin-binding kinetics
  - Transcription factor binding site acquisition on enhancers; interactions with RNA Polymerase II
  - Intrinsic and extrinsic transcriptional noise; control of noise (variability) in transcription factor concentration during development, differentiation, and physiology of the organism
  - Formation of biomolecular condensates (phase separation); amino-acid molecular “grammar”; agent and client proteins in condensates; the role of RNA
- Protein interactions: principles and methods
  - Introduction in protein interaction kinetics
  - Principles of protein interaction
  - Protein interaction experimental methodologies
  - Useful protein methodologies
  - Protein interaction maps
- Protein and peptide production in heterologous cellular systems

- Protein expression system in plants
- Introduction to protein analysis using mass spectrometry
- Bio-imaging
    - Confocal microscopy
    - Transmission electron microscopy
    - Single-molecule microscopy methodologies for the study of protein concentration, behavior, and interactions in biological problems [Fluorescence Correlation Spectroscopy (FCS), Fluorescence Cross-Correlation Spectroscopy (FCCS), Single-molecule tracking, Fluorescence Recovery After Photobleaching (FRAP)], Applications of single-molecule microscopy in the study of development and disease
    - Multiphoton Excitation Fluorescence, Second / Third Harmonic Generation, Optoacoustic Microscopy, Raster Scan Optoacoustic Mesoscopy (RSOM)
    - Live tomographic imaging
- Bioinformatics
- Mathematical models
- Model organisms in the study of immune system
    - Mouse
    - C. elegans
    - Drosophila
    - Plants
    - Organs-on-chip
- **Immunodiagnostics**
    - Diagnostic and therapeutic proteins of the immune system
        - Monoclonal and polyclonal antibodies
        - Cytokines
        - Immunological techniques
            - Immunoprecipitation
            - Immunoaffinity techniques for protein isolation
            - Enzyme-linked immunoassays
            - Immunofluorescence
            - Flow cytometry analysis
    - Proteins at surfaces
        - General principles of biosensors
        - Acoustic and optical biosensors for studying biological interactions
        - Electrochemical sensors -
        - Nanobiotechnology; Devices and integrated systems for diagnostics

IMM121. Experimental Immunology - Laboratory Training in Immunological Techniques

Duration: 2 weeks, ECTS: 10

Practical course

Prerequisite Courses: -

Learning Outcomes: Following this practical course the students are expected to acquire the skills for all basic techniques applied in immune diagnosis, providing at the same time a useful certification for future employment.

Syllabus

- ELISA
- Immunofluorescence
- Flow Cytometry analysis
- Cell culture (cell lines and primary cells)
- Microscopy
- Cytokine quantitative detection

- Immune cell proliferation
- Cellular cytotoxicity
- Phagocytosis
- Immunophenotyping in oncology

IMM122. Transferable Research Skills

Duration: 13 weeks, ECTS: 5

Attendance of BIOL474-Research and Communication skills for Immunologists.

Prerequisite Courses: -

Learning Outcomes: Upon completion of the course, the graduate students are expected to:

- Understand ethical rules in academia and science
- Gain skills in writing and presenting their scientific work
- Learn how to apply for funding
- Understand the various steps towards entrepreneurship
- Learn how to promote their work to an investor
- Learn how to proceed with clinical trials

Syllabus

- **Communication and Research Skills**
  - Academic and research morality
    Scientific ethics
  - Skills of presenting research results
  - Writing a curriculum vitae
  - How to write a thesis
  - How to write a research manuscript
  - Interview skills
  - Writing scholarship applications
- **Entrepreneurship**
  - Basic concepts of entrepreneurship, innovation, intellectual property, utilization of results
    - The Greek ecosystem of new entrepreneurship (4h)
    - Business creation
    - Legal issues
    - Choice of corporate form
  - Funding from an investor
    - From the idea to the business plan
  - Business model canvas
    - Business model design
  - Pitching preparation
  - Mentoring and pitching: develop your own ideas
  - From lab to market – Case study
  - Intellectual property legislation

Bibliography

Study and Communication Skills for the Biosciences 3e, Stuart Johnson and Jon Scott, Oxford University Press 2019

IMM123. Cooperative Training – Group Discussions – Journal Club

Duration: 14 weeks (4 weeks preparation and study of the papers, on week 5 presentations begin), ECTS: 5

Learning Outcomes: Upon completion of the course, the graduate students are expected to develop their critical skills in literature analysis and learn how to collaborate with classmates.

Syllabus
In ten consecutive weeks students with the aid of course coordinator will propose the reading, presentation and discussion of a chosen research article in the field of Immunobiology.
Bibliography
Published research.

IMM124. Research proposal – Designing a Research Project

Duration: 10 weeks, ECTS: 5
10-week project according to specific instructions. A research proposal template along with requirements needed will be provided.
Course Aims: The course aims to provide students with a critical understanding of research approach and methodology as applied to modern biomedical research. Students will have the opportunity to appraise different types of scientific research, and to examine critically the different steps within a research project. Students will demonstrate their understanding and competence through the development of the study design for their own research project, including hypothesis setting, literature review and project work plans. During the course, students will utilise the theoretical knowledge gained to critically review and synthesise the published literature, and to plan their upcoming research projects.
Intended Learning Outcomes of Course: By the end of this course students will be able to:

- critically analyse published literature in a research area, and from this ascertain a scientific question for a research project;
- develop hypotheses and design scientific experiments to address the hypotheses for the research project;
- critically evaluate scientific methods relevant to the research question;
- design a strategy for data analysis that leads to a defined outcome;
- design research in line with accepted research ethics, and legislation involving animal experimentation and research involving humans;
- select and succinctly summarise the key information in a complex research project, and effectively communicate this information to others;
- discuss and defend their research aims and approaches with in-depth awareness of the strengths and caveats of the research project

Timetable: This course consists of lectures, tutorials and supervisor meetings.
Assessment: Oral assessment and presentation - preparation of a scientific poster outlining the student's proposed project plus a 2-minute spoken summary of the poster (60%). Set exercise - viva-style examination of the student's understanding of and plans for their research project (40%).

IMM125. Laboratory training – Rotation 1

Duration: 3 months, ECTS: 5
10-week project in a laboratory of choice.
Course Aims: The course aims to provide students with an opportunity to perform a piece of original research to investigate a hypothesis or research questions within the subject area of the Masters programme. The project work will provide an opportunity for students to develop practical and/or technical skills, analyse data critically and draw conclusions, and suggest avenues for future research to expand their research findings.

IMM211. Laboratory training – Rotation 2

Duration: 3 months, ECTS: 5

10-week project in a laboratory of choice.

Course Aims: The course aims to provide students with an opportunity to perform a piece of original research to investigate a hypothesis or research questions within the subject area of the Masters programme. The project work will provide an opportunity for students to develop practical and/or technical skills, analyse data critically and draw conclusions, and suggest avenues for future research to expand their research findings.

IMM212. MSc Research Project & Thesis

Duration: 10 months, ECTS: 55

Prerequisite Courses: Successful completion of Year 1 studies

Intended Learning Outcomes of Course: By the end of this course students will be able to:

- critically design, plan and execute scientific experiments associated with the subject area of the Master's degree;
- develop and practice troubleshooting skills to address technical scientific and analytical problems;
- critically evaluate and analyse experimental data, and draw conclusions based on their findings;
- evaluate explanatory hypotheses and develop plans for further research, as appropriate to the topic chosen, identifying key areas where future research is needed;
- summarize and critique their own and prior research findings in oral presentations and communicate effectively with peers, supervisors and more senior colleagues;
- present research findings in the form of a critical written report, in correct scientific style using a range of appropriate computer software (e.g. Word, Reference Manager, Excel);
- take responsibility for the research project and associated resources with a degree of autonomy appropriate to the type of research;
- plan and manage time effectively by prioritising tasks and meeting deadlines;
- work co-operatively and effectively with colleagues to develop interpersonal and teamwork skills within a research environment, and reflect critically on their role and performance within the group.

Assessment: The project assessment will consist of the following components:

- Supervisor's report (35%) An assessment of the student's overall performance in the project will be provided by the project supervisor for specified criteria, using a written form with marking descriptors.
- Student's written report (50%) A written report of 10,000- 15,000 words formatted in appropriate scientific style, in the style of a scientific journal appropriate to the project research topic, to be submitted in the penultimate week of the project period. The report will be assessed by the Supervisor and an independent marker and the grade awarded will be an "agreed" mark.
- Oral presentation (15%) A short presentation of the project (followed by questions) to an audience consisting of fellow students and project supervisors in the final week of the course. The presentation will be assessed by two assessors (neither of whom will be the supervisor).