THE MODULE HANDBOOK
DOCTOR BIOLOGY STUDY PROGRAM
FACULTY OF BIOLOGY

SELECTED TOPIC FOR DISSERTATIONS

Cellular and Molecular Immunobiology

Course code	BIDB203004
Course level	Doctoral Program
Semester/ term	Odd/even
Course coordinator	Dr.biol.hom. Nastiti Wijayanti, S.Si., M.Si
Lecture(s)	Dr. Slamet Widiyanto, S.Si., M.Sc Dr.biol.hom. Nastiti Wijayanti, S.Si., M.Si Dr.med.vet. drh. Hendry TSSG Saragih, M.P
Language	Indonesian/English
Classification within the Curriculum	Compulsory (Selected Topic For Dissertations)
Teaching format/ class hours per week during the semester	This course is planned to have 14 teaching weeks and 2 weeks of examination.
Workload	90 hours
Credits	2-0 credits / 3.6 ECTS
Requirements	Receiving approval from the Supervisory Team.
Program Learning Outcome	CPL 2.1. Upon completing this program, the graduates demonstrate an attitude of being able to discover or develop new scientific theories/concepts/ideas in biology CPL 3.2. After completing this program, the graduates will be able to contribute to the development and practice of the field of biology through scientific research based on scientific principles and ethics through interdisciplinary, multidisciplinary, or transdisciplinary approaches in solving problems in the field of biology; CPL 4.3. After participating in this program, graduates will be able to apply the philosophy of biological systems in developing biological concepts in the areas of food, health, bioenergy, biomaterial and/or the environment.
Course Learning Outcome	BIDB243040.1 By the end of this course, students will have knowledge of the body's defense systems, and understand the differences between humoral and cellular immunity, as well as between innate and adaptive immune systems. BIDB243040.2 By the end of this course, students will understand the mechanisms and regulation of immune responses through both cellular and molecular components.

	BIDB243040.3 By the end of this course, students will be able to design research and understand the parameters and methods required for its analysis.
Course Description	This course explores the concepts of the body's defense mechanisms against antigens, including how immune responses are initiated and how the body activates components of the immune system cellular and humoral at the levels of innate and adaptive immunity. It provides students with foundational knowledge of the parameters and methodologies that can be applied to investigate immune defense mechanisms at the molecular and cellular levels.
Assessments	The assessment for Selected Topic for Dissertations (Cellular and Molecular Immunobiology) is based on five components, with the respective criteria and weights: • Participatory Activity (10%) • Literature Review (25%) • Result Design of Research Roadmap (10%) • Mid-term Exam (25%) • Research Proposal Draft in the field of endocrynology (30%)
Study Media and Literature	**Main:** 1. Cellular and Molecular Immunology, 8th edition, 2015. Abul Abbas, Andrew Lichtman and Shiv Pillai, Elsevier. 2. Basic Immunology. Edisi ke 5. 2016. Abul K Abbas, Andrew H. Lichtman dan Shiv Pillai. Elsevier. 3. Immunobiology. 5th edition. 2001. Charles A Janeway, Jr, Paul Travers, Mark Walport, and Mark J Shlomchik. Garland Science, New York. ISBN-10: 0-8153-3642-X **Additional** 1. Any reputable journals related to Imunobiology topic