THE MODULE HANDBOOK

Magister Biology Study Program

FACULTY OF BIOLOGY

HUMAN GENETICS

Course code	BIMB202228
Course level	Magister
Semester/term	Even
Course coordinator(s)	Dr. Niken Satuti Nur Handayani, M.Sc.
Lecture(s)	1. Dr. Niken Satuti Nur Handayani, M.Sc. 2. Dra. Rarastoeti Pratiwi, M.Sc., Ph.D. 3. Dr.biol.hom. Nastiti Wijayanti, S.Si., M.Si.
Language	Indonesian
Classification within the Curriculum	Compulsory
Teaching format/ class hours per week during the semester	This course is organised in single class and planned to have 14-16 teaching weeksand 2 weeks of examination.
Workload	Estimated working hour: 2 credits of theory
Credits	2-0 credits
Requirements	-
Program Learning Outcome	CPL KN2: The graduates are **demonstrating knowledge and comprehend** biological theories,includes all aspects of biological studies at various levels in the organization of life **(Knowledge)**; CPL KN3: The graduates are **demostrating excellent knowledge in** analysis and synthesis based on biological concepts, and principles of sustainable use and conservation of biological resource**(Knowledge)**; CPL GS5: The graduates are **able to** use information technology in scientific development and implementing it in their area of expertise (**General Skills**);
Course Learning Outcome	1. Students understand and are able to explain the structure of the genome and the factors that play a role in the emergence of genetic variations in humans, the causes of genetic disorders, diseases, and syndromes and their inheritance patterns; describeshow cancer arises and its associated genes. 2. Students understand and are able to explain how the mechanism of epigenetics occurs and the aspects that accompany and study twins.

	3. Students understand and are able to explain the mechanism of gene therapy and stemcell applications and related research methods, have an understanding of the importance of bio-ethics in genetic studies and the importance of genetic counseling. 4. Students will be able to design research in the field of health biology independently orin groups, able to solve problems related to human genetics by integrating genetics with other branches of biology
Course Description	This course contains the concept of human genetics which emphasizes the structure of the genome and the factors that play a role in the emergence of genetic variation in humans, causes of genetic disorders, diseases, and genetic syndromes and their inheritance patterns, cancer genetics, twin studies, epigenetics with research examples in identical twins. The application of stem cell technology for gene therapy is discussed without forgetting the ethical issues related to this material. At the end of this course, cases in the community that require assistance or counseling are discussed, to translate all technical and scientific information into understandable understandings by integrating genetics with other branches of biology.
Assesments	

Assessment Component	Percentage	CPMK 1	CPMK 2	CPMK 3	CPMK 4
Assessment Component	10				
Quiz/Dissusion	20				
Assignment	35				
Mid Semester Exam	35				

Study Media	Laptop, PC, Mobile phone, Tablets
Literature	1. Pasternak, J.J. 2005*. An Introduction to Human Molecular Genetics: Mechanisms ofInherited Diseases.* Second ed. John Wiley & Sons, Inc. 2. Hartl, D.L. and E.W. Jones. 1998. *Genetics: Principles and Analysis.* 4th ed. Jones andBartlett Publishers, Inc. 3. Pierce, B.A. 2002. *Genetics: A Conceptual Approach.* W. H. Freeman and Company 41Madison Avenue, New York, NY 10010 4. Albert, B., Bray, D., Lewis, J., Raff, M., Robert, K., Watson, J.D. 2008. *Molecular Biology ofthe Cell.* 5th ed. Garland Publ. Inc., New York. 5. Passarge, E. 2001. *Color Atlas of Genetics.* 2nd.ed. Thieme Stuttgart, New York (USA)