Course Specification Card for Inheritance (Elective)

College	College of Medicine	Department	Medical Education		
Course Name (English)	Inheritance	Course Name (Arabic)	الوراثة		
Course Number	786312	Course Code	1000322		
Credit Hrs.	1	Contact Hrs.	Theoretical	Practical	**T**
Teaching Language	English ☒ Arabic ☐		15	0	15
Teaching Method	☒ Face-to-Face	☐ Online	☐ Blended		
Course Nature	☒ Elective				
Course Type	☒ College Requirement				
Level	Year 3	Pre-Requisite(s)	None		

Course Description

Genetics is the study of how physical traits are inherited and the chemical structures that influence those traits. Genetics is increasingly important in all biological fields. It is important that students in any biologically-related field have a fundamental understanding of how physical and physiological traits are determined and passed to the next generation, as it is likely that they will encounter this at some point in their career. In this class, you will study DNA as the genetic material of all organisms, how it is replicated and transferred, how it controls phenotypic traits of organisms, and how changes in the DNA sequence result in variation within populations of species, ultimately leading to evolutionary change.

Topics

1. Introduction to medical genetics
2. Causes and types of genetic variation
3. Mendelian inheritance
4. Multifactorial disease
5. Cytogenetics
6. Diagnostic tools in genetics (PCR, Blotting, DNA sequencing)
7. Applications of Genetics in Medicne
8. Gene therapy
9. Human Genome project
10. Genetic basis of cancer

Learning Outcomes

1. Explain the basic principles of how genetic material is arranged and transmitted

2. Describe how a change in genetic material influences function 3.

Apply knowledge of genetic material to its manipulation

4. Relate population genetics to evolution

5. Articulate the importance of genetics to societal, medical, and personal issues

Assessment Tools	☐ Periodic Exams	10%	☐ Short Exams	**%**	☐ Final Exam	60%
	☐ Individual Assignments	20%	☐ Group Assignments	10%	☐ Oral Participations	**%**

Main Reference	▪ Required Texts Brooker, R. J. Genetics: Analysis and Principles, 6th edition. McGraw-Hill, New York, New York.
Supporting References	▪ Jorde, Carey, Bamshad: Medical Genetics. 4th Ed. Mosby