	وزارة التعليم العالي والبحث العلمي **جامعة المستقبل** كلية العلوم قسم الكيمياء الحياتية	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Biology			**Module Delivery**	
Module Type	Basic			☒**Theory** ☐**Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	UOMU036123				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Dept. of Bichemistry		**College**	College of Science	
Module Leader			**e-mail**		
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Review Committee Approval			**Version Number**	1.0	

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Understand the fundamental principles and techniques of human biology. 2. Discovery & Cells: This guide provides keys to course success and introduces the course topics, including cells. 3. Integumentary: Skin, hair, and nails 4. human Biology and Physiology - Tissues, organelles, reproduction and development. Extensive analytic and synthetic problem-solving capacities. 5. Storage of genetic information, gene expression and regulation, mitosis and meiosis, gene linkage and chromosome mapping. Sufficient scientific background to undertake research.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Demonstrate a comprehensive understanding of the principles and techniques of human biology. 2. The Human Biology course begins with an introduction to key concepts in biology, from molecular and cellular features to the .3concept of evolution, including genetics and physiology. 3. Skills training is an integral part of the course at all levels. Identify and classify various types of blood. 4. Continuously update knowledge in the field of human biology through self-directed learning and research.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Introduction to human biology: History and milestones in the field of human biology Basic concepts of human biology and applications. A blood type (also known as a blood group) is a classification of blood, based on the presence and absence of antibodies and inherited antigenic substances on the surface of red blood cells (RBCs). These antigens may be proteins, carbohydrates, glycoproteins, or glycolipids, depending on the blood group system. DNA as the genetic material because of the apparent simplicity of its chemistry. DNA was known to be a long polymer composed of only four types of subunits, which resemble one another chemically.

A DNA molecule consists of two long polynucleotide chains composed of four types of nucleotide subunits. Each of these chains is known as a DNA chain, or a DNA strand. Hydrogen bonds
between the base portions of the nucleotides hold the two chains together.

Chromosomes are thread-like structures present in the nucleus. They are important because they contain the basic genetic material DNA. These are present inside the nucleus of plants as well as animal cells. Chromosomes were first discovered by Strasburger in 1815 and the term 'chromosome' was first used by Waldeyer in
1888. Human beings have 46 chromosomes in their body. These are arranged into 23 pairs.

"A Chromosome looks like a thread and is coiled material, made of proteins. Chromosomes are present in the nucleus of all the cells and contain the basic genetic material DNA, which passes from one generation to another".

Structure:

A chromosome has generally 8 parts; Centromere or primary constriction or kinetochore, chromatids, chromatin, secondary constriction, telomere, chromomere, chromonema, and matrix.

Centromere or Kinetochore: It is the primary constriction at the center to which the chromatids or spindle fibers are attached. Its function is to enable movement of the chromosome during the anaphase stage of cell division.

Chromatid: During cell division, a chromosome is divided into 2 identical half strands joined by a centromere.

Role of nanobiotechnology in availability of a wide variety of core materials as well as the unique physical and chemical properties of these nanoscale materials.

Laboratory Skills:
Laboratory technician skills refer to the ability to carry out specialized tasks in a

	laboratory setting. Laboratory technicians perform specialized scientific tests, often for technical or diagnostic purposes, for which tasks such as hypothesizing, keeping records, dissecting, pipetting, measuring and sterilizing are common. To complete these tasks and others, laboratory technicians need a combination of hard and soft skills to ensure they follow guidelines and produce accurate laboratory results.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	9
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	5% (10)	5, 10	LO #3,4, 8 and 9
	Assignments	2	5% (10)	2, 12	LO # 2,11and 12
	Projects	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7

assessment	**Final Exam**	3hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction and basic principle of human biology
Week 2	Cell: Structure, properties and classification (part 1)
Week 3	Cell: Structure, properties and classification (part2
Week 4	Tissue: Structure, properties; classification and function(patr1)
Week 5	Tissue: Structure, properties; classification and function(part2)
Week 6	Circulatory system; Blood
Week 7	Skin and Hair
Week 8	Mid exam
Week 9	Structure and Function of DNA
Week 10	Structure and Function of DNA
Week 11	Genetic basis of DNA typing
Week 12	Human chromosomes **.**
Week 13	Chromosomes variations
Week 14	Human genetics
Week 15	Semi-lethal gene

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered

Week 1	Laboratory safety roles
Week 2	Types of microscopes and Parts of the Microscope
Week 3	Eukaryotic Cell Structure
Week 4	Organic Substances in the Cells
Week 5	Water, Acids, Bases and pH Enzymes in Living Tissues
Week 6	Mid exam
Week 7	DNA The Foundation of Life
Week 8	DNA Extraction and Gel Electrophoresis
Week 9	The Cell Cycle & Mitosis, Patterns of Inheritance
Week 10	Explain hematocrit, including the significance of values outside of the normal range
Week 11	Determine hematocrit from a blood sample image
Week 12	Explain the ABO and Rh blood groups and their clinical significance
Week 13	identify and describe all formed elements in a human blood smear.
Week 14	State the relative proportions of formed elements in human blood
Week 15	Second Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Reference book: Johnks and lnglis(eds.) Text book of Human Biology, 3rd Ed.	No (Available as an e-book)
Recommended Texts		
Websites		

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.