جامعة الموصل

كلية العلوم

قسم الفيزياء الحياتية

المرحلة الاولى

	الفصل الاول		
ت	اسم المادة	عدد الوحدات	مفردات المادة
١	Mechanics	٤.٥	Force , net force, Inertia and equilibrium, Newton's first law of motion, Newton's second law, Newton's third law, normal force, friction circular motion relation between linear angular quantities radial acceleration, tangential acceleration .
٢	Biology I	٣.٥	The cell cycle, type of microscope, cell injury and causes, water physical properties ,cell organelles, Evolution ,DNA and RNA
٣	Chemistry I	٤.٥	What is analytical chemistry? Basic tools of analytical chemistry, the language of analytical chemistry, evaluating analytical data, calibrations standardization and blank corrections, equilibrium chemistry, obtaining and preparing samples for analysis, graphemetric methods of analysis, titrimetric of analysis, spectroscopic methods of analysis, electrochmecal methods of analysis, chromatographic and electrophoreties methods, kinetic methods of analysis, developing a standard methods.
٤	Calculus I	٣	Matrix, properties of matrix, adjoint of square matrix,. Determinant, properties of determinate, inverse of matrix, solution of systems of equation by matrix inversion, grammars rule to solve system of equation. Coordinates and graphs symmetry, intercepts, slope and equation for lines, slope of non-vertical lines, angle of inclination, point- slope equation, even and odd functions, domain and rang, shift circule, trigonometric function, shift of trigonometric functions
٥	Computer& Basic Matlab	٣	Computer science, Operating system, BIOS, introduction to matlab, basic mathematic description by matlab waves and matrix, blotting and graphics, solving questions by matlab, introduction to programming by matlab
٦	حقوق إنسان	١	جذور حقوق الانسان وتطورها في التاريخ البشري ، حقوق الانسان في العصور القديمة والوسيطة، حقوق الانسان في التاريخ الحديث والمعاصر، حقوق الانسان في : التحديد والتعريف والضمانات، العلاقة بين حقوق الانسان والحريات العامة، اشكال واصناف حقوق الانسان والترابط بينها ، ضمانات احترام وحماية حقوق الانسان، تأثير ظاهرة الفساد الاداري على حقوق الانسان والمجتمع، تعريف الفساد الاداري وانواعه، اسباب وعوامل الفساد الاداري وانعكاساته على حقوق الانسان في المجتمع، المعالجات المنهجية الناجحة لمكافحة الفساد وحماية المجتمع منه .
	الفصل الثاني		

ت	اسم المادة	عدد الوحدات	مفردات المادة
١	**Wave &Optics**	٤.٥	**Wave motion, wave types, mathematical descriptions of waves, wave in two and three dimensional space, energy, power and intensity of waves. Standing wave and resonance, sound wave and intensity , dopplar effect , applications of dopplar effect in medicine, electromagnetic spectrum. Reflection and plane mirrors. Curved mirrors. Refraction and Snell's law. Optical fiber and endoscope. Lenses and magnifier microscope. Human eye. Contact lens. Correct the sight by laser. Laser tweezers.**
٢	**Biology II**	٣.٥	**Protoplast properties, energy flow, nutrition and food chain, cell division(mitosis and meiosis), plasma membrane structure, shapes of bacteria**
٣	**Chemistry II**	٤.٥	**Organic/ review of theories of bonding and molecular geometry, nomenclature, reaction of alkalines, cucloalkalines, organic halides, aromatics and alcohols, stereochemistry, conformational analysis, survey the reactivity and properties of functional groups, aromaticsaldehydes and ketones, carboxylic acids and amines.** **Inorganic/ periodic table, valence bond and molecular orbital approaches, acid- base chemistry, solid state structures, properties of representative elements, coordination chemistry of transition elements, modern coordination chemistry, prepequisites: graduate standing.**
٤	**Calculus II**	٣	**Differentiation, application of Differentiation, Integration, Integration techniques and computational method.**
٥	**Biomolecules**	٤	**Water and pH, structures, properties and function of carbohydrates, structures, properties and function of amino acids, structures, properties and function of peptides and proteins, structures, properties and function of lipids, structures, properties and function of nucleosides and nucleotides, structures, properties and function of nucleic acids, structures, properties and function of enzymes, structures, properties and function of hormones, structures, properties and function of minerals and vitamins**
٦	ديمقراطية	١	النظم السياسية، نظام الحكم الديمقراطي، صور الحكم الديمقراطي، الديمقراطية، الديمقراطية ونظم ادارة الدولة، موقف الفكر الاسلامي من الديمقراطية.