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**Module Specification template**

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| Part One: About the module |
| 1a | Module title | Introduction to General Biochemistry |
| 1b | Subject | Biosciences |
| 1c | Location(s) module is offered | Holloway |
| 1d | Courses Module is available on | Option MSc Biomedical Studies (DL) |
| 2 | Module code | BM7012DL |
| 3 | Module level and credit rating | *Level 7* | *10* |
| 4 | School | *Human Sciences* |
| 5 | Teaching period | *Year Long (30 weeks).* |
| 6 | Mode of attendance | *Distance Learning* |
| 7 | Module pre-requisites and co-requisites |  |
| 8 | Module description |
| This module provides experience, knowledge and understanding of the principles and practice of general biochemistry and metabolism.  |
| 9 | Module learning outcomes |
| On successful completion of this module students will be able to:1. Demonstrate an understanding of the principles and features, regulation and interconnection of key metabolic pathways and knowledge of the structure, properties and distribution of biomolecules2. Demonstrate an understanding of the principles energy is conserved and utilized in metabolic pathways and relate this to nutritional status.3. Explain and evaluate the range and diversity of metabolic processes  |
| 10 | Indicative syllabus – *for full details see section C in Module Booklet* |
| Structure, properties and distribution of biomolecules: Proteins: amino acids, the peptide bond, levels of protein structure. Carbohydrates: structure and behaviour of monosaccharides, selected sugar derivatives, the glycosidic bond, reducing and non-reducing disaccharides, oligo- and polysaccharides, determinants of their function. Lipids: structure and behaviour of fatty acids and glycerides. Classification of lipids. Water: structure and behaviour of water, contribution to macromolecular structure.Carbohydrate metabolism: glycolysis, gluconeogenesis, their metabolic roles and importance in energy supply and provision of precursors. The role of allosteric enzymes in the control of metabolism: phosphofructokinase and the control of glycolysis. Regulation of glycogen synthesis and breakdown. Carboxylic acid metabolism: Krebs cycle, dehydrogenation reactions, proton and electron acceptors, electron transport. Interconversion of fats and carbohydrates. Lipid metabolism: fatty acids and other esters - functions, transport and storage; biosynthesis, degradation and desaturation. Acetyl CoA carboxylase and fatty acid biosynthesis. Amino acid metabolism: nitrogen sources, nitrogen pool, amination, deamination and transamination. Biosynthesis and catabolism of amino acids and the regulation of pathways. | *LO1-3* |
| 11 | Indicative bibliography and key on-line resources  |
| Elliot, WH, Elliot DC (2014) Biochemistry and Molecular Biology Oxford Nelson, D.L and Cox, M.M (2016). Lehninger Principles of Biochemistry (5th edition). London. Worth (core)Vanbergen O, Wintle G (2019) Crash Course: Metabolism and Nutrition (5th edition). London. Mosby (core)Berg LM, (2018). Biochemistry. London. Freeman. |
| 12 | What is the balance of independent study and scheduled teaching activity within the module, the approach to blended learning and the opportunities for reflective learning/PDP? |
| Information pertaining to the subject matter will be presented through an integrated programme of lectures and supporting exercises, together with some use of a problem-based learning approach and the guided use of student-centred learning resources. Lectures will be used to provide a conceptual framework. Student centred assignments will enable students to reinforce and expand their knowledge, and develop subject specific skills and competence. |
| *NOTE: 1 credit = 10 hours’ learning* |
| *Method* | *Description*  | *Learning hours* |
| Scheduled Learning & Teaching | Lectures, tutorials, and on-line exercises  |  |
| Guided independent study | Weblearn tasks & study | 100 |
| Assessment preparation/delivery |  |  |
| Placement/study abroad |  |  |
| **TOTAL LEARNING HOURS FOR THE MODULE** | 100 |
| 13 | Description of assessment items. |
|  | The module will be formatively assessed by in-course online quizzes and two coursework components. A reflective learning log (2000 words) and a written assignment (1000 words). Criteria for assessment will include an understanding of the subject matter; an ability, both orally and written, to explain, describe and discuss the work; completeness and conciseness of written reports and essays with emphasis upon critical ability and scientific rigour. To pass the module students need to achieve a minimum aggregate mark of 50%. There are no practical sessions.Component Learning outcomes Quizzes 1,2Reflective learning log 2,3 Written assignment 2,3 |
| *Description of Assessment*  | *Assessment weighting* | *Week Due* | Learning Outcome/s |
| *In-class Test* | Online Quizzes | *20* | 35 | 1,2 |
| *Coursework* | Reflective Learning Log (2000 words) | *40* | 35 | 2,3 |
| *coursework* | Written Assignment (ECA) (1000 words) | *40* | 35 | 2,3 |

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| Part Two: SCHOOL use  |
| 14 | Nominated External Examiner | *Dr Marilena Ioannou* |
| 15 | Nominated Module Leader at time of approval  | *Juli Le Page Pezet* |

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| Part Three: Official use and codes *– responsibility for completion is as indicated* |
| 16 | Original date of validation (AQD) | *Please enter the validation date* |
| 17 | Revision date (specify cohort) (AQD) | *Please note date of any modifications* |
| 18 | Module specification version number (AQD) | *Please input the version number* |
| 19 | SITS Mark Scheme (Student Journey) | *Please input the SITS mark scheme* |
| 20 | Subject Standards Board Name (Student Journey) | *Please input the SSB name* |