UNIVERSITY of BRADFORD

Module Descriptor

| Module Details | |
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| Module Title | Cardiovascular, Respiratory and Renal Systems |
| Module Code | CLS4002-B |
| Academic Year | 2020/1 |
| Credits | 20 |
| School | School of Pharmacy and Medical Sciences |
| Subject Area | Clinical Sciences |
| FHEQ Level | FHEQ Level 4 |
| Pre-requisites | N/A |
| Co-requisites | N/A |

| Contact Hours | |
|---|---|
| Type | Hours |
| Tutorials | 12.5 |
| Seminars | 15 |
| Laboratories | 20.5 |
| Lectures | 33 |
| Directed Study | 119 |

| Availability | |
|---|---|
| Occurrence | Location / Period |
| BDA | University of Bradford / Academic Year |

| Module Aims |
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| To develop knowledge of: the structure, function & control of the human cardiovascular, respiratory and renal systems; its contribution to the maintenance of homeostasis; how the system is affected by common diseases & the basic principles of assessment & treatment of common cardiovascular, respiratory and renal disorders |

## Outline Syllabus

Introduction to transport systems, homeostasis, cardiovascular and respiratory physiology. Structure of heart and major blood vessels, development, congenital defects and valvular problems. Excitation and heart contraction, cardiac cycle. Cardiac output, gas transport. Blood flow, tissue perfusion, cardiovascular pressure, regulation and capacitance. Structure of respiratory system, its blood supply and innervation, development of respiratory system, ventilation and lung mechanics, gas exchange and transport, respiratory regulation and adjustments. Clinical assessment: Lung function testing, major features of chest X ray, respiratory muscle strength. Heart rate and cardiac cycle. ECG and blood pressure measurement. Cardiovascular and Respiratory disease: Chronic heart failure, acute chest pain, ischaemic heart disease, hypertension and thrombosis. Disturbance of cardiac rhythm, drug effects of rhythm and contractility. Respiratory failure and physiological consequences. Lung defences: physical, biological, immunological. Microbiology of lungs, diagnosis and treatment of acute and chronic infections. Pathology, diagnosis and treatment of asthma, interstitial lung disease, cancers. Introduction to the renal system and its role in homeostasis and its relationship with other transport systems. Structure and development of the renal system. Renal perfusion and glomerular filtration. Renal tubular function, renal clearance, body fluid compartments and their composition. Renal perfusion and glomerular filtration. Renal tubular function, renal clearance, body fluid compartments and their composition. Regulation of water, salt and acid/base balance; renal regulation of haemoglobin and calcium. Urine composition, clearance measurements, imaging and examination of urinary structures. Interpretation of acid/base disturbances. Acute and chronic renal failure, glomerulonephritis, nephrotic syndrome and common infections of the urinary tract. Common pathological changes in the urinary tract. The role of the kidney in hypertension. Dialysis, diuretics and transplantation.

## Learning Outcomes

| Outcome Number | Description |
|---|---|
| 01 | Describe the structure and function of the human cardiorespiratory and renal systems, the control of respiration and cardiovascular function and the clinical assessment of cardiorespiratory and renal function. |
| 02 | Describe the features of common respiratory, cardiovascular and renal diseases and their treatments. |
| 03 | Demonstrate knowledge of the basis for the practical assessment of cardiorespiratory and renal function. |
| 04 | Interpret cardiorespiratory and renal function data. |
| 05 | Work collaboratively with colleagues to produce oral case study presentations and summaries. |
| 06 | Review your progress on the module and work to clearly defined targets. |

## Learning, Teaching and Assessment Strategy

N/A

## Mode of Assessment

| Type | Method | Description | Length | Weighting |
|---|---|---|---|---|
| Summative | Computer-based assessment | Online MCQ assessment | 1 hour 30 mins | 70% |
| Summative | Computer-based assessment | Online Anatomy MCQ assessment | 30 mins | 30% |

| Reading List |
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| To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html |

*Please note:*
*This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.*

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