UNIVERSITY of BRADFORD

Module Details

Module Title	Computing in Medical Imaging
Module Code	RAD5501-B
Academic Year	2024/5
Credits	20
School	School of Allied Health Professions and Midwifery
FHEQ Level	FHEQ Level 5

Contact Hours

Type	Hours
Directed Study	3
Independent Study	138
Seminars	6
Lectures	15
Clinical Placement	20
Placement	18 (of which 9 are virtual simulated placement activities)

Availability

Occurrence	Location / Period
BDA	University of Bradford / Semester 1

Module Aims

The module will enable students to identify and evaluate the role of computerised and automated systems within healthcare and medical imaging service delivery. Students will develop fundamental computer programming knowledge relevant to medical imaging and data management systems.

Outline Syllabus

Function and use of digital and computerised systems in medical imaging and healthcare delivery.
Computing and fundamental programming knowledge and skills relevant to medical imaging technology and data management.
Computerised/automated decision making in image acquisition ? what, when, why, how and where.
Use of artificial and augmented intelligence within medical imaging and ethics of AI including radiographer responsibilities.
Computerised/automated approaches to dose optimisation and image reconstruction in medical imaging.
Data management systems used in patient pathways including those undergoing medical imaging and the ethical and legislative implications of data management including adherence to standards 2,5 & 10 of HCPC standards of conduct, performance and ethics.

Learning Outcomes

Outcome Number	Description
01	Critically evaluate the operation, use, and governance, of computing/automated technologies in medical imaging and their contribution to personalised, patient-centred services.
02	Examine computed and automated parameters in image acquisition and post processing and the radiographer?s responsibility for assuring parameter optimisation.
03	Analyse how diagnostic imageappearancescan be optimised through the application of image processing algorithms.
04	Explore howinnovative technologies such as genomics, digital medicine, artificialintelligenceand robotics can improve medical imaging and wider healthcare services and the ethical, human and sustainability factors related to their implementation.

Learning, Teaching and Assessment Strategy

Keynote lectures will explore key concepts in digital health systems and imaging automation. Face to face learning activities will include facilitated peer discussions, scenario activities and lectures. A workbook will guide practical simulation sessions where students will operate and evaluate on-campus Xray (CR & DR), Computed tomography (CT) consoles and Picture Archive Communication System (PACs), undertaking a series of formative and summative practical application exercises and reflections as part of their learning.
Clinical placement will enable students to observe, operate and reflect on the use of digital and computerised systems in a patient facing medical imaging setting thereby embedding their knowledge and skills in contemporary practice.
Asynchronous directed learning activities will support the development of independent learning skills through reflection and self-assessment of understanding of the learning materials. The reading list and CANVAS VLE materials will support further exploration of the module syllabus to provide learning extension for students.

Continuous written assessment. Students will undertake a series of tasks, practical application and reflection exercises in a workbook to demonstrate learning outcomes 1,2,3 & 4.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Coursework - Written	Assessed workbook of activities and reflections	100%
Referral	Objective Structured Clinical Examination	OSCE	100%
Formative	Coursework	Formative feedback on workbook activities.	N/A

Reading List
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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