

## MODULE SPECIFICATION

This module is a compulsory module of the new MSc Health Data Science. The module specification has been provisionally agreed as part of the validation process for the MSc. Module Organisers are currently developing the details of the teaching to ensure the best possible learning experience and therefore some changes may still be made. We anticipate that the final module specifications will be published by the end of the summer.

### 1. Overview

<b>Academic Year (student cohort covered by specification)</b>	2020-2021			
<b>Module Code</b>	2485			
<b>Module Title</b>	Introduction to Health Data Science			
<b>Module Organiser(s)</b>	Helen McDonald & Helen Strongman			
<b>Faculty</b>	Epidemiology & Population Health			
<b>FHEQ Level</b>	Level 7			
<b>Credit Value</b>	CATS	10	ECTS	5
<b>HECoS Code</b>	100994			
<b>Term of Delivery</b>	Term 1			
<b>Mode of Delivery</b>	Face-to-face			
<b>Mode of Study</b>	Full time			
<b>Language of Study</b>	English			
<b>Pre-Requisites</b>	None, over and above the pre-requisites for the programme MSc Health Data Science			
<b>Accreditation by Professional Statutory and Regulatory Body</b>	None			
<b>Module Cap (Maximum number of students)</b>	In first year of delivery: max 20 students.			
<b>Target Audience</b>	This module is compulsory for the MSc in Health Data Science.			

<b>Module Description</b>	An introduction to health data science covering a range of available data sources and key considerations for using them, including ethics, information governance and data quality. This module will be brought to life by experienced data scientists through lectures, panel discussions and workshops.
<b>Duration</b>	10 x 0.5 day sessions
<b>Timetabling slot</b>	Term 1
<b>Last Revised (e.g. year changes approved)</b>	December 2019

## 2. Programme(s) that this module is part of

<b>Programme</b>	<b>Status</b>
This module is linked to the following programme(s)	
MSc Health Data Science	Compulsory

## 3. Module Aim and Intended Learning Outcomes

<b>Overall aim of the module</b>
<p>The overall module aim is to:</p> <ul style="list-style-type: none"> <li>provide the foundational knowledge and understanding of health data science to allow students to develop: (i) a sense of the emerging health data landscape, and (ii) high professional standards as a working health data scientist.</li> </ul>

<b>Module Intended Learning Outcomes</b>
<p>Upon successful completion of the module a student will be able to:</p> <ol style="list-style-type: none"> <li>contrast a range of applications of health data science;</li> <li>examine the context in which key sources of health data are collected;</li> <li>critically evaluate the implications of the data collection context for the storage, access, quality, and analysis of the data;</li> <li>appraise the ethical implications of a given study design within a health data science project;</li> <li>examine key information governance, and security issues relevant to health data science.</li> </ol>

## 4. Indicative Syllabus

Session Content
<p>The module is expected to cover the following topics:</p> <ul style="list-style-type: none"> <li>• data sources and systems relevant to health data science in the UK and abroad;</li> <li>• ethical issues and processes, with a focus on current controversies relevant to Health Data Science (including data ownership, consent, ethics of algorithms);</li> <li>• information governance, anonymization, privacy, and relevant regulatory frameworks (e.g. GDPR)</li> <li>• data quality issues in routinely collected data (coding/missclassification, linkage, missing data)</li> <li>• examples of health data science in practice</li> </ul>

## 5. Teaching and Learning

Notional Learning Hours		
Type of Learning Time	Number of Hours	Expressed as Percentage (%)
Contact time	22	22
Directed self-study	30	30
Self-directed learning	33	33
Assessment, review and revision	15	15
<b>Total</b>	<b>100</b>	<b>100</b>

Teaching and Learning Strategy		
A variety of teaching methods will be used, including traditional didactic lectures, panel debate, computer practicals, problem solving group work, and self-directed learning.		
Indicative Breakdown of Contact Time:		
Type of delivery	Total (hours)	
Lecture	10.5	
Panel debates	4.5	
Seminar	3	
Tutorial	0	
Computer Practical	4	
Laboratory Practical	0	
Fieldwork	0	
Project Supervision	0	
<b>Total</b>	<b>22</b>	

## 6. Assessment

### Assessment Strategy

Formative assessment will include an in-module open book MCQ test on information governance. The MCQ test will be untimed and multiple attempts will be permitted.

Summative assessment for this module will be via coursework. Students will be set a research question (e.g. 'can we predict dementia using routine data?') and invited to submit a written outline describing alternative choices of data source, answering structured questions covering ethical, governance, and data security issues.

### Summative assessment

Assessment Type	Assessment Length (i.e. Word Count, Length of presentation in minutes)	Weighting (%)	Intended Module Learning Outcomes Tested
Coursework	Maximum 750 words	100	1- 5

### Resitting assessment

Resits will accord with the LSHTM's [Resits Policy in Chapter 8a, PGT Regulations, of the Academic Manual](#)

For individual students resitting a group assessment there will be an approved alternative assessment as detailed below.

Assessment being replaced	Approved Alternative Assessment Type	Approved Alternative Assessment Length (i.e. Word Count, Length of presentation in minutes)
N/A – no group assessment		

## 7. Resources

### **Indicative reading list**

Deeny SR, Steventon A. Making sense of the shadows: priorities for creating a learning healthcare system based on routinely collected data. *BMJ Quality & Safety* 2015;24:505-515.

Goldacre, B. (2008) *Bad Science*. London: Fourth Estate.

### **Other resources**

Information Commissioner's Office website <https://ico.org.uk/>

Module information, including timetables, lecture notes, practical instructions and key literature for each session will be made available via the Virtual Learning Environment (Moodle).

## 8. Teaching for Disabilities and Learning Differences

This module will seek to benefit from technology enhanced learning resources to meet the needs of students with disabilities or learning differences. This will include:

- use of Panopto to record lectures for which this is feasible in the booked room (with opt-out offered to external speakers) in line with the LSHTM's policy on Lecture Recording;
- requesting lecturers to follow the LSHTM Technology Enhanced Learning guidance on making PowerPoint presentations inclusive and to use the built-in accessibility checker;
- requesting lecturers to provide slides and/or handouts at least a week prior to lectures/seminars and making these available in advance; and
- collecting and responding to student feedback on the module organisation and materials.