

AI in cancer care course schedule – September 2025 cohort

Week	Online learning		Assignments	Live events on Zoom (recorded)
	Unit	Completion deadline	(all deadlines 11.59pm)	
[0] 8 Sept	Login details provided		Complete pre-course information and charter	
[1] 15 Sept	Unit 1.1 - What is AI? Definitions of AI and its evolution since the 1950s. Types of AI: Expert systems, machine learning, deep learning. Overview of the primary types of AI, including the different forms of machine learning.	21 Sept		15 Sept: 7–8.30pm Welcome session
[2] 22 Sept	Unit 1.2 - How AI Works How expert systems are developed Case study: Deontics' PROSAIC-DS for prostate cancer MDTs. How machine learning neural networks function (without maths). Case study: Predictive ML model for brain cancer diagnosis.	28 Sept		
[3] 29 Sept	Unit 1.3 - AI applications in cancer diagnostics and planning Current applications of ML in cancer care using examples from this course or from the learner's own clinical practice. Case Studies: AI-assisted MRI for prostate cancer, radiotherapy auto-contouring for head & neck cancer, Paige.AI's breast lymph node pathology AI (FDA-cleared).	5 October	Formative assignment 1 due: 5 October	

[4] 6 October	<p>Unit 1.4 - NLP and LLMs in Oncology</p> <p>Introduction to natural language processing (NLP) and large language models (LLMs).</p> <p>Case Studies: Cogstack NLP for structuring unstructured clinical data, Google DeepMind's ELIXR and its potential for summarising complex patient histories and multimodal reasoning.</p>	12 October		8 Oct 7-8.30pm
[5] 13 October	<p>Unit 2.1 - Why standards matter in AI</p> <p>Evidence and effectiveness in medicine and AI.</p> <p>The limitations of the evidence base for current medical practice including some of the most popular drugs.</p> <p>Understanding the "hype cycle" with examples. Case study: IBM Watson for Oncology.</p>	19 October	Graded assignment 1 due: 19 October	
[6] 20 October	<p>Unit 2.2 - Designing AI systems: Early stage standards</p> <p>Applying BS 30440 at the inception stage.</p> <p>Case studies: Deontics' PROSAIC-DS (co-design and MDT streamlining), Skin Analytics' DERM AI for melanoma referrals, Kheiron's MIA mammography AI</p>	26 October		20 Oct: 7-8.30pm
[7] 27 October	<p>Unit 2.3 - Developing AI systems: Data and model design</p> <p>Standards for training data, model inputs/outputs, and validation.</p> <p>Case Studies: Cogstack NLP, Google DeepMind's ELIXR.</p>	2 November		
[8] 3 November	<p>Unit 2.4 - Applying standards to development</p> <p>In-depth analysis of how standards are met in development.</p> <p>Case studies: Paige.AI's pathology model, AI-assisted prostate MRI system.</p>	7 November		

[9] 10 November	Unit 2.5 - Real-world validation – what good looks like Validating AI prior to deployment using BS 30440. Case studies: PROSAIC-DS in practice (equity, bias, methodology), Radiotherapy auto-contouring (bias and clinical effectiveness).	16 November		
[10] 17 November	Unit 2.6 - Case-based validation analysis Applying real-world validation standards Case studies: Paige.AI pathology AI (external validity, bias, cost-effectiveness), Kheiron MIA (equity, bias, real-world clinical utility).	23 November		
[11] 24 November	Unit 3.1 - Overcoming deployment challenges Barriers to routine use of AI in healthcare. Practical strategies for NHS deployment. Case study: Guy's Clinical Scientific Computing (CSC) team	30 November		24 Nov: 7–8.30pm
[12] 1 December	Unit 3.2 - Bringing it all together Final reflective learning and application to show: an understanding of how AI products and systems in healthcare work, where they can or might be applied in your working world, the ability to ask the right questions when presented with a promising AI technology to decide if it 'does what it says on the tin' and that you have learnt how best to use it and work alongside it.	7 December		
[13] 8 December	Focus on writing the final assignment			
[14] 15 December			Graded assignment 2 due: 21 December	