Table 9: Comparison of the proposed curriculum with related research and privacy-related computing undergraduate courses offered by universities within the top 50 of the Times Higher Education Rankings.

	Institute	Intervention / Course Name	Stand-alone Privacy Course	Threat Modelling	PETs			Intervention Evaluation			Other Privacy Lessons	Artifacts
					Name	Theory	Programming	Type: Quant.	Type: Qual.	Depth		
Research	[Redacted]	Proposed curriculum	-	✓	Pseudonymisation	✓	✓	✓	✓	•pre/post survey to measure the improvement in knowledge, confidence and skills in threat mitigation •perception towards programming tasks •perception towards the role in privacy protection •correlation between improved privacy understanding and perceived role in privacy protection •exam question quality analysis	•definition •societal aspect •contextual privacy •data privacy •regulations •consequences-individuals •consequences-organisations •privacy by design	✓
					K-anonymity	✓	✓					
					Differential privacy	✓	✓					
					Federated learning	✓	-					
					Homomorphic Encryption	✓	-					
					Zero-knowledge proof	✓	-					
					Synthetic data	✓	-					
	-	[43]	✓	-	K-anonymity	✓	✓	✓	-	•pre/post survey to measure the improved confidence in their privacy skills	•definition & history •data privacy •web & mobile privacy •adversarial thinking	-
					L-diversity	✓	✓					
					Differential privacy	✓	✓					
	University of California, Irvine	[54]	-	✓	-			✓	✓	•pre/post survey to measure the improved knowledge •lesson reflections	•risk assessments •regulations •privacy policies & settings	-
	-	[60]	-	-	-			✓	-	•pre/post Defining Issue test to measure the improvement in moral reasoning •post survey to measure student experience	•privacy by design	-
	Prairie View A&M University	[36]	-	-	-			✓	-	•pre/post survey to measure the improvement in location privacy knowledge •post survey to evaluate the lab-ware effectiveness	•location privacy through anonymisation •privacy and utility trade-off	-
	-	[59]	-	-	-			-	✓	•pre/post surveys, •classroom video & audio recordings, •assessments answers, to analyse how students experienced and learned through the intervention, and how students' critical evaluation on data privacy and caring changed	•ethical implications of data collection and use	-
University Course Catalogues	University of Oxford	Deep Learning in Healthcare	-	-	Federated learning	✓	-	■	■	■	-	-
					Differential privacy	✓	-					
	Harvard University	CS105 Privacy and Technology	✓	✓	Differential privacy	✓	-	■	■	■	•theoretical background •societal aspect •legal perspective •anonymity •re-identification •surveillance •tracing and tapping •emerging technologies (AI)	-
		CS1260 Fairness and Privacy: Perspectives from Law and Probability	✓	-	Differential privacy	✓	-	■	■	■	•algorithmic foundations for privacy	-

✓ = provides property; - = missing property; quant. = quantitative; qual. = qualitative; ■ = property not applicable;

	Institute	Intervention / Course Name	Stand-alone Privacy Course	Threat Modelling	PETs			Intervention Evaluation			Other Privacy Lessons	Artifacts
					Name	Theory	Programming	Type: Quant.	Type: Qual.	Depth		
University Course Catalogues	Princeton University	COS109 Computers in Our World	-	-	-						•personal information •surveillance •tracking •protection measures-users	✓
		ECE432 Information Security	-	-	-						•privacy and anonymity	-
	Stanford University	CS155 Computer and Network Security	-	-	Tor	✓	-				•definition •data sharing •tracking •anonymity	✓
		CS182 Ethics, Public Policy, and Technological Change	-	-	Differential privacy Homomorphic encryption	✓ ✓	- -				•definition •societal aspect •privacy paradox •regulations •anonymisation	✓
	Caltech	CS162 Data, Algorithms and Society	-	-	-						•mentions privacy	-
	University of California, Berkeley	COMPSCI195 Social Implications of Computer Technology	-	-	-						•tracking •regulations •threats-user perspective •protection mechanisms-user	-
	ETH Zürich	252-0211-00L Information Security	-	-	-						•definition •anonymity •policies	-
	University of Chicago	CMSC10434 Technology and Privacy in the Digital Age	✓	-	-						•historical foundations •societal aspect •cultural aspect •policies	-
		CMSC23206 Security, Privacy, and Consumer Protection	-	-	-						•regulations •surveillance •tracking	-
		CMSC23210 Usable Security and Privacy	-	-	-						•regulations •privacy notices •anonymity •online data collection •contextual integrity	✓
		CMSC23218 Surveillance Aesthetics: Provocations About Privacy and Security in the Digital Age	-	-	-						•anonymity •privacy notices •data-driven privacy tools •user-perspective	-
		CMSC23800 Adversarial Machine Learning	-	-	-						•privacy of ML models •privacy attack on models	-
		CMSC26900 Ethics, Fairness, Responsibility, and Privacy in Data Science	-	-	-						•privacy and data science lifecycle •algorithms for privacy	-
		CMSC25910 Engineering for Ethics, Privacy, and Fairness in Computer Systems	-	-	-						•privacy invasiveness of computer systems	-

✓= provides property; - = missing property; quant. = quantitative; qual. = qualitative; ■ = property not applicable

	Institute	Intervention / Course Name	Stand-alone Privacy Course	Threat Modelling	PETs: Name	PETs: Theory	PETs: Programming	Intervention Evaluation: Type: Quant.	Intervention Evaluation: Type: Qual.	Intervention Evaluation: Depth	Other Privacy Lessons	Artifacts
University Course Catalogues	Johns Hopkins University	EN.601.104 Computer Ethics	-	-	-						•privacy issues	-
		EN.601.443 Security & Privacy in Computing	-	-	-						•mentions privacy	-
		EN.601.124 The Ethics of Artificial Intelligence and Automation	-	-	-						•mentions privacy	-
	National University of Singapore	CS4267 Algorithmic Foundations of Privacy	✓	-	Differential privacy Tor	✓ ✓	-				•anonymity •data privacy •privacy attacks (inference & reconstruction)	-
	University College London	COMP0061 Privacy Enhancing Technologies	✓	-	Differential privacy Zero-knowledge proof	✓ ✓	-				•private communications •anonymous communications •traffic analysis •interdisciplinary aspects •cryptographic protections	-
	University College London	COMP0056 People and Security	-	-	-						•data protection •privacy by design •PST model •Surveillance, dataveillance, and sousveillance	-
	Carnegie Mellon University	15330 Introduction to Computer Security	-	-	-						•mentions privacy	-
		15316 Software Foundations of Security & Privacy	-	-	Differential privacy	✓	-				-	✓
	Duke University	COMPSCI351 Computer Security	-	-	-						•technologies to support online privacy (not listed)	-
	Northwestern University	COMPSCI496 Security and Privacy Education	-	-	-						•analysing privacy education approaches for users and technology designers (lesson plan not given)	-
		COMPSCI312,412 Data Privacy	✓	-	Differential privacy	✓	-				•data privacy •database anonymisation •anonymous communications •algorithmic fairness •privacy in web, social media and ML	-
		COMPSCI396: Differential Privacy: from Foundations to Machine Learning	✓	-	Differential privacy	✓	-				•data privacy •privacy attacks •algorithms for private learning	-
	École Polytechnique Fédérale de Lausanne	COM301 Computer security and privacy	-	-	-						•mentions privacy	-
	Georgia Institute of Technology	CS4726 Privacy Tech Policy	✓	-	-						•privacy in technology, policy, ethics, law, and business	-
	University of British Columbia	COSC_O421 Network Science	-	-	-						•data privacy	-

✓= provides property; - = missing property; quant. = quantitative; qual. = qualitative; ■ = property not applicable

	Institute	Intervention / Course Name	Stand-alone Privacy Course	Threat Modelling	PETs: Name	PETs: Theory	PETs: Programming	Intervention Evaluation: Type: Quant.	Intervention Evaluation: Type: Qual.	Intervention Evaluation: Depth	Other Privacy Lessons	Artifacts
University Course Catalogues	McGill University	COMP189 Computers and Society	-	-	-						•data privacy	-
		COMP666 Information Privacy	✓	-	-						•privacy by design •privacy threats •privacy concerns in databases, web, mobile apps and cloud	-
	University of Illinois at Urbana-Champaign	CS211 Ethical and Professional Conduct	-	-	-						•mentions privacy	-
		CS442 Trustworthy Machine Learning	-	-	Differential privacy ✓		-				•membership and model inversion attacks •differentially private data generative models	-
		CS471 Computer Security I	-	-	-						•assess and address privacy issues for policy and humans •privacy risk analysis according to CIA triad •human issues in privacy •legal and ethical issues	-
		CS463 Computer Security II	-	-	-						•privacy & anonymity •policy composition and analysis •privacy of emerging systems •privacy issues in social networks •privacy issues in web •human factors in privacy	-
		CS464 Topics in Societal and Ethical Impacts of Computer Technology	-	-	-						•mentions privacy	-

✓ = provides property; - = missing property; quant. = quantitative; qual. = qualitative; ■ = property not applicable