H9DGE: Data Governance and Ethics

Module Code:	H9DGE
Long Title	Data Governance and Ethics APPROVED
Title	Data Governance and Ethics
Module Level:	LEVEL 9
EQF Level:	7
EHEA Level:	Second Cycle
Credits:	5
Module Coordinator:	
Module Author:	Margarete Silva
Departments:	School of Computing
Specifications of the qualifications and experience required of staff	PhD/Master's degree in a computing or cognate discipline. May have industry experience also.

Learning Outcomes

On successful completion of this module the learner will be able to:

#	Learning Outcome Description
LO1	Critically interpret the governance and regulatory frameworks associated with the capture, processing, and stewardship of data.
LO2	Critically interpret the roles and responsibilities pertaining to data security, privacy, and data protection.
LO3	Analyse and evaluate the intersection of data and ethics in socio-technical environments.
LO4	Investigate and appraise the interplay of fairness, accountability, and transparency in algorithmic decision making systems.

Dependencies

Module Recommendations

No recommendations listed

Co-requisite Modules

No Co-requisite modules listed

Entry requirements	A level 8 degree or its equivalent in any discipline

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Module Content & Assessment

Indicative Content
Data Governance Data quality and provenance.. Data management.. Roles and responsibilities.. Management of data policies, processes and procedures. . Data integrity & security.. Risk management.. Models and tools for data governance.
Privacy and Data Protection The right to privacy – constitutional and statutory protections, privacy and the European Convention on Human Rights and EU Charter of Fundamental Rights. . Common law protection. . Data Protection Regulation Scope, processing of personal data, legitimate bases, principles of data protection, sensitive data, issues of consent.. Rights, supervision and enforcement.. Data Protection in practice including international transfers, surveillance, cloud computing, and auditing.. Current reform of the area.
Ethical Issues Pertaining to Data Ethics and Computing – examining moral problems when using the Internet - spam, censorship and free speech, anonymity offered by the Internet.. Ethical issues arising from the increasing use and pervasiveness of Information Technology and socio-technical systems. . Health technology.. Pervasive monitoring and tracking.. Image, video and sound capture.. Identity.. Perpetuity of data storage.. Transnationality.. Copyright.. IOT.
Fairness, Accountability, and Transparency of Algorithmic Systems The meaning of fairness with respect to algorithmic systems.. Techniques and models for fairness-aware data mining, information retrieval, recommendation, etc.. Legal, social, and philosophical models of fairness.. Specification of mathematical objectives with respect to fairness.. Perceptions of algorithmic bias and unfairness.. Interventions to mitigate biases in systems, or discourage biased behaviour from users.
Fairness, Accountability, and Transparency of Algorithmic Systems The meaning of accountability with respect to algorithmic systems.. Processes and strategies for developing accountable systems. Methods and tools and standards for ensuring that algorithms comply with fairness policies (e.g., IEEE P7003 TM).
Fairness, Accountability, and Transparency of Algorithmic Systems The meaning of transparency with respect to algorithmic systems.. Explanations for algorithmic logic and outputs.. Trade-offs between privacy and transparency.. Tools and methodologies for conducting algorithm audits. Frameworks for conducting ethical and legal algorithm audits. Empirical results from algorithm audits.

Assessment Breakdown	%
Coursework	100.00%

Assessments

Full Time

Coursework

Assessment Type:	Formative Assessment	**% of total:**	Non-Marked
Assessment Date:	n/a	**Outcome addressed:**	1,2,3,4
Non-Marked:	Yes		

Assessment Description:
Formative assessment will be provided on the in-class individual or group activities. Feedback will be provided in written or oral format, or on-line through Moodle. In addition, in class discussions will be undertaken as part of the practical approach to learning.

Assessment Type:	Continuous Assessment	**% of total:**	80
Assessment Date:	n/a	**Outcome addressed:**	1,2,3,4
Non-Marked:	No		

Assessment Description:
This will assess learners' knowledge, understanding and ability to appraise and address issues relating to data governance, ethics, privacy, data protection, fairness, accountability, and transparency of algorithmic systems

Assessment Type:	Project	**% of total:**	20
Assessment Date:	n/a	**Outcome addressed:**	4
Non-Marked:	No		

Assessment Description:
The project assessment element will assess learners' insights and evaluation of ethical issues that are related to their own research work.

No End of Module Assessment

No Workplace Assessment

Reassessment Requirement

Repeat examination
Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.

Reassessment Description
The repeat strategy for this module is a project submission. All learning outcomes will be assessed in the repeat project submission. This project will require learners to evaluate, appraise, and address data governance and ethical issues relating to both their own research work and other situational contexts and scenarios.

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Module Workload

Module Target Workload Hours 0 Hours

Workload: Full Time

Workload Type	*Workload Description*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Lecture	Classroom & Demonstrations (hours)	18	Every Week	18.00
Tutorial	Other hours (Practical/Tutorial)	12	Every Week	12.00
Independent Learning	Independent learning (hours)	70	Every Week	70.00
			Total Weekly Contact Hours	30.00

Module Resources

Recommended Book Resources

Katherine O'Keefe,Daragh O Brien. (2018), Ethical Data and Information Management, Kogan Page, p.344, [ISBN: 0749482044].

Anno Bunnik,Anthony Cawley,Michael Mulqueen,Andrej Zwitter. (2016), Big Data Challenges, Palgrave, p.140, [ISBN: 1349948845].

Herman T. Tavani. (2012), Ethics and Technology, Wiley, p.456, [ISBN: 1118281721].

Terrell Ward Bynum,Simon Rogerson. (2003), Computer Ethics and Professional Responsibility, Wiley-Blackwell, p.378, [ISBN: 1855548453].

This module does not have any article/paper resources

This module does not have any other resources

Discussion Note:	