

<b>MODULE TITLE</b>	Data in Business and Society		<b>CREDIT VALUE</b>	15
<b>MODULE CODE</b>	ECMM432		<b>MODULE CONVENER</b>	Unknown
<b>DURATION: TERM</b>	1	2	3	
<b>DURATION: WEEKS</b>				
<b>Number of Students Taking Module (anticipated)</b>	8			

### DESCRIPTION - summary of the module content

Data science is revolutionising many aspects of society, with major impacts on industry, business and the public sector. These rapid changes raise many important issues concerning ethics, privacy and governance. In this module you will learn about the social context of data science and how data is used to inform business practices. You will also consider the ethical issues that can arise from machine learning and analysis of “big data”, as well as the legal frameworks and legislation relevant to collection and use of data by organisations. This module provides essential background for any data scientist or data manager whose use of data might affect people or organisations.

Pre-requisites: ECMM429 Introduction to Data Science.

Co-requisites: None.

### AIMS - intentions of the module

This module aims to:

â– Explore how information and analytics can support the development of strategy in organisations, in ways that are responsive to broader social concerns in the UK and internationally;

â– Encourage critical approaches to data definition and collection methodologies with the aim of creating accurate links between real-world problems and data driven solutions;

â– Enhance responsiveness to data protection and dissemination policies at local, national and international level;

â– Provide skills in engaging data providers and customers to ensure compliance with regulations and legal systems;

â– Ensure awareness of social embedding of data collection, analysis and re-use practices, with attention to potential challenges in advertising, implementing and assessing data science services (and particularly Big Data) for the general public as well as specific stakeholders (government, local authorities, competitors in industry, lobby groups).

The module is jointly taught with the Business School and will feature guest lectures from practitioners in data governance. The module will draw on recent scholarship in data studies and case studies based on a variety of contexts. The module will offer an opportunity to acquire knowledge of data handling practices and their implications for business, and enhance data management skills for those pursuing careers in planning and analytics. The module provides training in ethical and societal implications of data management strategies, and applications within business planning.

The module will engage you in independent research to produce an individual essay reflecting on data management issues within your own business.

### INTENDED LEARNING OUTCOMES (ILOs) (see assessment section below for how ILOs will be assessed)

On successful completion of this module *you should be able to:*

#### Module Specific Skills and Knowledge

1. Understand key terms and concepts in data science and information management and be able to relate these to a typical business situation.
2. Critically evaluate current approaches used for collection, management, communication and analysis of commercial, operational and sustainability data, and how this data is used to support decision-making.
3. Apply ‘Design Thinking’ techniques to the analysis of specific business challenges and use these to identify required data and information flows.
4. Develop and use data visualisation techniques to share original content and insight with a general management audience.
5. Understand how to manage data storage, archiving, dissemination and re-use in order to improve long-term sustainability and customer base of business.
6. Understand how current legislation and intellectual property regimes affect data management practices.

#### Discipline Specific Skills and Knowledge

7. Apply theoretical arguments, frameworks and concepts from data studies to the analysis of business and management scenarios. Link theoretical constructs and organisational practices.
8. Critically articulate how different organisations and individuals approach practice and why differences exist.
9. Demonstrate a critical awareness of the contributions of different stakeholder perspectives and data management practices to delivering sustainable solutions.
10. Demonstrate an integrated and holistic perspective when generating solutions.

#### Personal and Key Transferable / Employment Skills and Knowledge

11. Analyse and draw conclusions from unstructured problems and scenarios.
12. Demonstrate analytical skills both with regard to data and to the design of information flows in organisations.
13. Demonstrate cognitive skills of critical and reflective thinking.
14. Demonstrate effective independent study and research skills.

### SYLLABUS PLAN - summary of the structure and academic content of the module

The module will cover:

â– How businesses use data to build, understand and report their strategic goals

â– Applying current concepts in data and analytics to real examples

â– Using ‘Design Thinking’ to create information management systems

â– Understanding the legal, ethical and governance considerations around use and analysis of data in social and business contexts.

Specific topics will include:

â– Data projects. Using the CRISP-DM protocol and design thinking techniques to understand organisational problems in data management and scope solutions to these.

â– Defining objects using data. Approaches to data visualisation.

â– Workshop on “what are data?”. Big data, small data and the challenge of capturing the long tail of research.

â– Group discussions around essay topic.

â– Workshop on data storage and archiving.

â– Guest lectures on Intellectual Property, legal regimes and regulatory structures around the ownership and maintenance of databases.

â– Workshop on data dissemination, curation and Open Data, the limits of automation, and the challenges of making data accessible and re-usable.

â– Presentations on essay topics, group discussion of data challenges within different types of businesses with varying customer base.

â– Data protection and legal frameworks for data collection, storage and analysis.

## LEARNING AND TEACHING

### LEARNING ACTIVITIES AND TEACHING METHODS (given in hours of study time)

<b>Scheduled Learning &amp; Teaching Activities</b>	32.00	<b>Guided Independent Study</b>	118.00	<b>Placement / Study Abroad</b>	0.00
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### DETAILS OF LEARNING ACTIVITIES AND TEACHING METHODS

Category	Hours of study time	Description
Scheduled learning and teaching activities	32	Interactive workshops, discussion sessions, lectures
Guided independent study	118	Reading, personal research exercise, writing

## ASSESSMENT

### FORMATIVE ASSESSMENT - for feedback and development purposes; does not count towards module grade

Form of Assessment	Size of Assessment (e.g. duration/length)	ILOs Assessed	Feedback Method
Discussion of essay topics	Two hour seminar	1-12	Oral

### SUMMATIVE ASSESSMENT (% of credit)

Coursework	80	Written Exams	0	Practical Exams	20
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### DETAILS OF SUMMATIVE ASSESSMENT

Form of Assessment	% of Credit	Size of Assessment (e.g. duration/length)	ILOs Assessed	Feedback Method
Presentation about essay topic	20	Thirty Minutes	1-12	Oral
Written essay	80	3000 words, to be delivered at the end of the module	2-14	Written comments and marks

### DETAILS OF RE-ASSESSMENT (where required by referral or deferral)

Original Form of Assessment	Form of Re-assessment	ILOs Re-assessed	Time Scale for Re-assessment
Presentation about essay topic	One-page essay outline	1-12	Within 8 weeks
Written essay	Written essay	2-14	Within 8 weeks

### RE-ASSESSMENT NOTES

Deferral - if you miss an assessment for certificated reasons judged acceptable by the Mitigation Committee, you will normally be either deferred in the assessment or an extension may be granted. The mark given for a re-assessment taken as a result of deferral will not be capped and will be treated as it would be if it were your first attempt at the assessment.

Referral - if you have failed the module overall (i.e. a final overall module mark of less than 50%) you will be required to re-take some or all parts of the assessment, as decided by the Module Convenor. The final mark given for a module where re-assessment was taken as a result of referral will be capped at 50%.

## RESOURCES

### INDICATIVE LEARNING RESOURCES - The following list is offered as an indication of the type & level of information that you are expected to consult. Further guidance will be provided by the Module Convenor

#### Basic reading:

ELE: <http://le.exeter.ac.uk/>

#### Web based and Electronic Resources:

#### Other Resources:

Science International (2015). Big Data in an Open Data World.

Hey et al. 2009. The Fourth Paradigm. Microsoft Publishing.

Hine, Christine. 2006. "Databases as Scientific Instruments and Their Role in the Ordering of Scientific Work." Social Studies of Science 36 (2): 269-98.

Dove, Edward S., Yann Joly, Anne-Marie Tassé, Paul Burton, Rex Chisholm, Isabel Fortier, Pat Goodwin, et al. 2015. "Genomic Cloud Computing: Legal and Ethical Points to Consider." European Journal of Human Genetics 23 (10): 1271-78. doi:10.1038/ejhg.2014.196.

Dove, Edward S., David Townend, Eric M. Meslin, Martin Bobrow, Katherine Littler, Dianne Nicol, Jantina de Vries, et al. 2016. "Ethics Review for International Data-Intensive Research." Science 351 (6280): 1399-1400. doi:10.1126/science.aad5269.

Burton, Paul R., Madeleine J. Murtagh, Andy Boyd, James B. Williams, Edward S. Dove, Susan E. Wallace, Anne-Marie Tassé, et al. 2015. "Data Safe Havens in Health Research and Healthcare." Bioinformatics 31 (20): 3241-48. doi:10.1093/bioinformatics/btv279.

Boulton, Geoffrey, Brian Campbell, Brian Collins, Peter Elias, Wendy Hall, Graeme Laurie, Onora O'Neill, et al. 2012. "Science as an Open Enterprise." 02/12. London: The Royal Society Science Policy Centre.

#### Reading list for this module:

Type	Author	Title	Edition	Publisher	Year	ISBN	Search
Set	Schutt, R and Oâ€™Neill, C	Doing Data Science: Straight Talk from the Frontline.		O'Reilly	2014		<a href="#">[Library]</a>
Set	Boyd, d and Crawford, K	Six provocations for Big Data. A Decade in Internet Time: Symposium on the Dynamics of the Internet and Society.			2011		<a href="#">[Library]</a>
Set	Kitchin, R.	The Data Revolution .		Sage	2013		<a href="#">[Library]</a>
Set	Richards, M., Anderson, R., Hinde, S., Kaye, J., Lucassen, A., Matthews, P., Parker, M., Shotter, M., Watts, G., Wallace, S., Wise, J.,	The collection, linking and use of data in biomedical research and health care: ethical issues .		Nuffield Council on Bioethics, London.	2015		<a href="#">[Library]</a>
Set	Fleming LE, Tempini N, Gordon-Brown H, Nichols G, Sarran C, Vineis P, Leonardi G, Golding B, 4 Haines A, Kessel A, Murray V, Depledge M, Leonelli S.	Big Data in Environment and Human Health: Challenges and Opportunities.		Oxford University Press.			<a href="#">[Library]</a>
Set	Leonelli, S.	Data-centric Biology: A Philosophical Study.	Chapter 2	Chicago University Press.	2016		<a href="#">[Library]</a>
Set	Borgman, Christine L.	Big Data, Little Data, No Data .		Cambridge, MA: MIT Press.	2015		<a href="#">[Library]</a>
Set	Provost & Fawcett	Data Science for Businessâ€™.		O'Reilly	2013		<a href="#">[Library]</a>
Set	Mayer-Schonberger V. & Cukier K.	Big data: a revolution that will transform how we live work and		John Murray	2013		<a href="#">[Library]</a>

CREDIT VALUE	15	ECTS VALUE	7.5
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PRE-REQUISITE MODULES ECMM429

CO-REQUISITE MODULES

NQF LEVEL (FHEQ) 7

AVAILABLE AS DISTANCE LEARNING No

ORIGIN DATE Thursday 20 April 2017

LAST REVISION DATE Tuesday 10 April 2018

KEY WORDS SEARCH Data science, data practices, social implications, sustainability, business models, customer interactions, business planning

