Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

MODULE DIRECTORY

LEVEL 7

MSc Digital Skills for the Health and Care Professions

Postgraduate Diploma Digital Skills for the Health and Care Professions

Postgraduate Certificate Digital Skills for the Health and Care Professions

University Certificate Digital Skills for the Health and Care Professions

ACADEMIC DISCIPLINE: Digital Health and Care

INSTITUTE OF MANAGEMENT AND HEALTH

2022-2023

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INTRODUCTION

This Module Directory includes all the modules for Level 7 within the MSc Digital Skills for the Health and Care Professions programme within the Institute of Management and Health in the academic year 2022-2023.

This directory accompanies the Programme of Study Handbook, which will provide you with details of which modules you will be studying for your programme this year in the 'Programme of Study' section. This directory may include modules that are running on other programmes of study within your Academic Discipline/Institute. If you require assistance in identifying the modules for your programme of study, please contact the Programme Manager (whose name and contact details are provided in the accompanying Programme of Study Handbook), or the relevant Institute Office.

The University has made every effort to make the information as full and as accurate as possible, but you should note that minor changes in the organisation of modules between the planning stage and the actual teaching are inevitable. We shall try to keep any such changes to a minimum, and you will receive plenty of advance warning in the event of any alteration. We would also be grateful if you would let us know about any changes that you think might be helpful if introduced into future handbooks.

MODULES

Module Code	**BMDS7006**
Title	**Digital Technology in Health and Social Care**
Date	**08/03/2022**
Level	**7**
Credits	**40**
Pre-Requisites	**None**

AIM(S)

To explore the role of digital technology within a whole systems approach to data use and management that is not dependent on individual sectors within health or social care and which supports seamless care. This will inform the provision of a digitally literate workforce that helps individuals interact with each other, patients and the public within their roles.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Demonstrate a systematic, extensive and comparative knowledge and understanding of how data is used safely, ethically and appropriately in a multidisciplinary care setting to support whole system change, improve outcomes and partnership working.

- Apply a project management methodology to develop a whole system improvement programme specifying the approach/research design, objectives and outcomes.

- Demonstrate a systematic understanding and knowledge of the concepts, methods and technological components of a digital technology and evaluate critically its functionality, benefits and limitations in a specific context.

INDICATIVE CONTENT

- Knowledge management, data management, information management and information governance (UK and international).
- Using data in a multidisciplinary health and care setting to manage expectations, improve decision making, plan service change and drive improvement in quality and performance.
- Methods of software design, technology introduction and systems integration.
- Project management methodologies: defining, planning and implementing digital change.
- The use, functionality, benefits and limitations of digital applications, as applied in different contexts.
- The role of informatics and information systems in the health and social care systems.
-
- Communication across clinical informatics projects and/or teams, value of technologies that enable co-production of health (e.g., mobile applications, social media, sensors) to improve health and promote citizen (patient) engagement.
- Qualities of a system/technology and the trade-off between them when developing/deploying them (e.g., maintainability, compatibility, scalability,

performance, recovery) in relation to current and future thinking around innovative health systems.

- Security and governance of data, systems, devices and networks (e.g., Data Security and Protection Toolkit).
-
- Patient/citizen safety risk in the design and development of information systems and technologies.
- Patient resources providing information on healthcare interventions, public health and engaging with the patient and technology used to deliver it (including the quality of information, type and assessment) to inform patients' decision-making.
- Definition, key components and the rationale of evidence-based practice and the application of informatics.
- Theories, concepts and practices of management to informatics projects to develop clear strategies and plans for delivery of clinical informatics projects/programmes.
- Value of informatics facilitated research and the importance of improved digital literacy to be able to embed and increase knowledge.
- Roles of people working in informatics and the knowledge and skills they should have
- Successful delivery of an informatics project/programme and links to collaborative working.

Study Time Allocation

The study time for the module is divided as follows:

Activity type	**Hours**	**Percentage**
Scheduled learning	60	15%
Independent learning	340	85%
Placement learning		
TOTAL	**400**	**100%**

ASSESSMENT

Assessment Component 1 ***(Tick one)***

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	**Volume**	**Weighting**
Software Application Assessment	5,000 words or equivalent	50%

Assessment Component 2 ***(Tick one)***

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	**Volume**	**Weighting**
Programme Improvement Project	5,000 words	50%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**BMDS7006**	
Module Title	**The Digital Professional for Health and Care**	
Classification	**Reading List entry**	**Electronic ***
Essential	Topol, E., (2019) The Topol Review. Preparing the Healthcare Workforce to Deliver the Digital Future, pp.1-48. Available at https://topol.hee.nhs.uk/	☒
Essential	Wachter, Prof. R. (2016). Making IT work: Harnessing the Power of Health Information Technology to Improve Care in England. London, Department of Health and Social Care. Available at https://www.gov.uk/government/publications/using-information-technology-to-improve-the-nhs/making-it-work-harnessing-the-power-of-health-information-technology-to-improve-care-in-england	☒
Essential	Welsh Government (2016) Informed Health and Care: A Digital Health and Social Care Strategy for Wales. Available at https://gov.wales/sites/default/files/publications/2019-03/informed-health-and-care-a-digital-health-and-social-care-strategy-for-wales.pdf	☒
Further	Sujan, M., Scott, P., Cresswell, K. (2019) Digital health and patient safety: Technology is not a magic wand. *Health Informatics Journal*, 26(4): 2295-2299. doi: 10.1177/1460458219876183.	☒
Further	Scott, P., Briggs, J. (2009). STAT-HI: A Socio-Technical Assessment Tool for Health Informatics Implementations. *Open Medical Informatics Journal*, 4: 214-20. doi: 10.2174/1874431101004010214.	☒
Further	Cresswell, K., Bates, D., Sheikh, A. (2013). Ten key considerations for the successful implementation and adoption of large-scale health information technology. *J Am Med Inform Assoc*, 20(e1): e9–e13. doi: 10.1136/amiajnl-2013-001684.	☒
Further	Michie, S., van Stralen, M.M. & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Sci,* 6(42). doi: 10.1186/1748-5908-6-42.	☒

Cod y Modwl	**BMDS7006C**
Teitl	**Technoleg Ddigidol ym maes Iechyd a Gofal Cymdeithasol**
Dyddiad	**08/03/2022**
Lefel	**7**
Credydau	**40**
Rhagofynion	**Dim**

AMCAN(ION)

Archwilio rôl technoleg ddigidol o fewn dull system gyfan wrth ddefnyddio a rheoli data, nad yw'n ddibynnol ar sectorau unigol o fewn iechyd neu ofal cymdeithasol ac sy'n cefnogi gofal di-dor. Bydd hyn yn hysbysu darparu gweithlu sy'n hyddysg yn ddigidol sy'n helpu unigolion i ryngweithio â'i gilydd, â chleifion a'r cyhoedd o fewn eu rolau.

DEILLIANNAU DYSGU

Ar ôl cwblhau'r modwl hwn yn llwyddiannus, dylai'r myfyriwr allu:

- Arddangos gwybodaeth a dealltwriaeth systematig, helaeth a chymharol o sut mae data'n cael eu defnyddio'n ddiogel, yn foesegol ac yn briodol mewn lleoliad gofal amlddisgyblaethol er mwyn cefnogi newid ar sail system gyfan, gwella canlyniadau a gweithio mewn partneriaeth.

- Cymhwyso methodoleg rheoli prosiectau i ddatblygu rhaglen wella ar sail system gyfan gan bennu'r dull/dyluniad ymchwil, yr amcanion a'r canlyniadau.

- Arddangos dealltwriaeth a gwybodaeth systematig o gysyniadau, dulliau ac elfennau technolegol technoleg ddigidol a gwerthuso'n feirniadol ei nodweddion, eu buddion a'u cyfyngiadau mewn cyd-destun penodol.

CYNNWYS DANGOSOL

- Rheoli gwybodaeth, rheoli data, rheoli gwybodaeth a llywodraethu gwybodaeth (yn y DU ac yn rhyngwladol).
- Defnyddio data mewn lleoliad iechyd a gofal amlddisgyblaethol i reoli disgwyliadau, gwella gwneud penderfyniadau, cynllunio newid gwasanaeth a gyrru gwelliannau o ran ansawdd a pherfformiad.
- Dulliau dylunio meddalwedd, cyflwyno technoleg ac integreiddio systemau.
- Methodoleg rheoli prosiectau: diffinio, cynllunio a gweithredu newid digidol.
- Nodweddion, buddion, cyfyngiadau a'r defnydd o gymwysiadau digidol, fel y'u cymhwysir mewn cyd-destunau gwahanol.
- Rôl gwybodeg a systemau gwybodaeth yn y systemau iechyd a gofal cymdeithasolCyfathrebu ar draws prosiectau gwybodeg clinigol a/neu dimau, gwerth technolegau sy'n galluogi cyd-gynhyrchu iechyd (e.e. cymwysiadau symudol, y cyfryngau cymdeithasol, synwyryddion) i wella iechyd a hyrwyddo cysylltu â dinasyddion (cleifion).
- Rhinweddau system/technoleg a'u pwyso a mesur wrth eu datblygu/gweithredu (e.e. gallu i'w cynnal a chadw, cydweddoldeb, gallu i dyfu, perfformiad, adfer) mewn perthynas â'r meddwl cyfredol ac yn y dyfodol ynghylch systemau iechyd arloesol.
- Diogelwch a llywodraethu data, systemau, dyfeisiau a rhwydweithiau (e.e. Pecyn Cymorth Diogelwch Data a Diogelu Data).

- Risg i ddiogelwch cleifion/dinasyddion wrth ddylunio a datblygu systemau a thechnolegau gwybodaeth.
- Adnoddau cleifion sy'n darparu gwybodaeth ynghylch ymyriadau gofal iechyd, iechyd y cyhoedd ac ymgysylltu â'r claf a'r dechnoleg a ddefnyddir i'w gyflwyno (gan gynnwys ansawdd gwybodaeth, math ac asesu) er mwyn hysbysu'r broses gwneud penderfyniadau i gleifion. Diffiniad o arfer seiliedig ar dystiolaeth, ei brif elfennau a rhesymwaith a chymhwyso gwybodeg.
- Damcaniaethau, cysyniadau ac arferion rheoli yng nghyswllt prosiectau gwybodeg er mwyn datblygu strategaethau a chynlluniau eglur ar gyfer darparu prosiectau/rhaglenni gwybodeg glinigol.
- Gwerth ymchwil a hwylusir gan wybodeg a phwysigrwydd gwell llythrennedd digidol er mwyn gallu ymgorffori a chynyddu gwybodaeth.
- Rolau pobl sy'n gweithio ym maes gwybodeg a'r wybodaeth a'r sgiliau a ddylai fod ganddynt.
- Cyflwyno prosiect/rhaglen gwybodeg yn llwyddiannus a chysylltiadau â gwaith cydweithredol.

Dyraniad Amser Astudio

Mae'r amser astudio ar gyfer y modwl wedi ei rannu fel a ganlyn:

Math o weithgaredd	**Oriau**	**Canran**
Dysgu wedi'i amserlennu	60	15%
Dysgu'n annibynnol	340	85%
Dysgu drwy leoliadau		
CYFANSWM	**400**	**100%**

ASESU

Elfen Asesu 1 (*Ticiwch un*)

☐ **Arholiad ysgrifenedig** ☒ **Gwaith cwrs** ☐ **Ymarferol**

Dull asesu	**Maint**	**Pwysiad**
Asesiad o Gymhwysiad Meddalwedd	5,000 o eiriau neu gyfwerth	50%

Elfen Asesu 2 (*Ticiwch un*)

☐ **Arholiad ysgrifenedig** ☒ **Gwaith cwrs** ☐ **Ymarferol**

Dull asesu	**Maint**	**Pwysiad**
Prosiect ar Wella Rhaglen	5,000 o eiriau	50%

Crynodeb o'r Asesiad

Math o weithgaredd	**Canran**
Arholiad ysgrifenedig	
Gwaith cwrs	100%
Ymarferol	
CYFANSWM	**100%**

RHESTR DDARLLEN DDANGOSOL

Cod y Modwl	**BMDS7006C**	
Teitl y Modwl	**Y Gweithiwr Proffesiynol Digidol ym maes Iechyd a Gofal**	
Categori	**Eitemau'r Rhestr Ddarllen**	**Electronig***
Hanfodol	Topol, E., (2019) The Topol Review. Preparing the Healthcare Workforce to Deliver the Digital Future, pp.1-48. Available at https://topol.hee.nhs.uk/	☒
Hanfodol	Wachter, Prof. R. (2016). Making IT work: Harnessing the Power of Health Information Technology to Improve Care in England. London, Department of Health and Social Care. Ar gael yn https://www.gov.uk/government/publications/using-information-technology-to-improve-the-nhs/making-it-work-harnessing-the-power-of-health-information-technology-to-improve-care-in-england	☒
Hanfodol	Llywodraeth Cymru (2016) Iechyd a Gofal Gwybodus: Strategaeth Iechyd a Gofal Cymdeithasol Ddigidol ar gyfer Cymru. Ar gael yn https://llyw.cymru/sites/default/files/publications/2019-03/iechyd-a-gofal-gwybodus-strategaeth-iechyd-a-gofal-cymdeithasol-ddigidol-ar-gyfer-cymru.pdf	☒
Pellach	Shirley, D., (2020) Project Management for Healthcare, 2nd Ed., Boca Raton: CRC Press	☒
Pellach	Bocij, P., Greasley, A., Hickie, S (2019) Business Information Systems: Technology, Development and Management for the Modern Business, 6th ed. Harlow: Pearson 2019	☒
Pellach	Haidar, A. (2015) Business Technologies in Contemporary Organizations: Adoption, Assimilation, and Institutionalization, Hershey, Pennsylvania: Business Science Reference	☒
Pellach	Lipschultz, J. H. (2018) Social Media Communication: Concepts, Practices, Data, Law and Ethics, Second edition. New York: Routledge, Taylor & Francis Group	☒
Pellach	Mertz, J., 2015. Computing for the social good and cultivating cultures for ethical computing. Computers & society, 45(2), pp.39–40.	☒
Pellach	Heurix, Johannes, 2016. Recognition and pseudonymisation of medical records for secondary use. Medical & Biological Engineering & Computing, 54(2/3), pp.371–384.	☒

Module Code	**BMDS7007**
Title	**Managing Digital Strategy to Enhance Health and Care**
Date	**08/03/2022**
Level	**7**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

To examine the dimensions of digital strategy that support continuous improvement in the quality of health and social care services

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Explore current and emerging technologies that can be strategically deployed to improve decision-making, delivery and communication between health and social care professionals, patients and citizens at local and national levels.
- Analyse the challenges related to designing, developing and procuring digital technology effectively in health and care services.
- Reflect on methods of multi- and inter-disciplinary working between healthcare professionals, system developers and stakeholders in order to optimise digital strategy development and implementation in the health and social care sector.

INDICATIVE CONTENT

- Policy initiatives, drivers and constraints affecting health and social care planning and service delivery linked to digital technology strategy and architecture.
- Lifecycle of how an information system is designed and developed (including planning, creating, testing and deploying stages whether in a linear or iterative approach).
- Lifecycle of how an information system is specified and procured from commercial suppliers.
- Methods to assess the safety and efficacy of information systems (e.g., usability, performance, cost effectiveness) and maintain patient safety (i.e. data privacy, patient and user confidentiality, security and integrity following current excepted standards)
- Partnership working and impact on the key qualities of a system (e.g., scalability, maintainability, performance, structure, availability) when designing and developing information systems (e.g., electronic health records)
- Health and care informatics technical standards(including coding systems, data structures, data security and privacy).

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	30	15%
Independent learning	170	85%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1 ***(Tick one)***

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Digital Strategy Vision and Blueprint	3500 words	75%

Assessment Component 2 ***(Tick one)***

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Reflective Account: Multi-Stakeholder Working	1500 words	25%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**BMDS7007**	
Module Title	**Enhancing Health and Wellbeing Using Digital Skills**	
Classification	**Reading List entry**	**Electronic***
Essential	National Audit Office, (2020). *Digital Transformation in the NHS.* Available from: https://www.nao.org.uk/report/the-use-of-digital-technology-in-the-nhs/	☒
Essential	NHS Providers, (2021). *Building a Digital Strategy.* Available from: https://nhsproviders.org/building-a-digital-strategy	☒
Further	NHS England, (2015). *NHS Interoperability Handbook.* Available from: https://www.england.nhs.uk/wp-content/uploads/2017/03/interoperabilty-handbk.pdf	☒
Further	Health Level Seven, (2021). *FHIR Overview – Clinicians.* Available from: https://hl7.org/fhir/overview-clinical.html	☒
Further	SNOMED International, (2022). *SNOMED CT Five Step Briefing*. Available from: https://www.snomed.org/snomed-ct/five-step-briefing	☒
Further	FEDIP, 2021. *The FEDIP Consultation: Becoming the Profession.* Available from: https://www.fedip.org/	☒
Further	Davies, A. et al. (2021). Development of a core competency framework for clinical informatics. *BMJ Health & Care Informatics,* 28:e100356. doi: 10.1136/bmjhci-2021-100356	☒

Cod y Modwl	**BMDS7007C**
Teitl	**Rheoli Strategaeth Ddigidol i Wella Iechyd a Gofal**
Dyddiad	**08/03/2022**
Lefel	**7**
Credydau	**20**
Rhagofynion	**Dim**

AMCAN(ION)

Archwilio dimensiynau strategaeth ddigidol sy'n cefnogi gwelliant parhaus yn ansawdd gwasanaethau iechyd a gofal cymdeithasol yn barhaus

DEILLIANNAU DYSGU

Ar ôl cwblhau'r modwl hwn yn llwyddiannus, dylai'r myfyriwr allu:

- Archwilio technolegau cyfredol a rhai sy'n dod i'r amlwg y gellir eu defnyddio'n strategol i wella gwneud penderfyniadau, cyflwyno a chyfathrebu rhwng gweithwyr proffesiynol iechyd a gofal cymdeithasol, cleifion a dinasyddion ar lefelau lleol a chenedlaethol.

- Dadansoddi'r heriau sy'n gysylltiedig â dylunio, datblygu a chaffael technoleg ddigidol yn effeithiol mewn gwasanaethau iechyd a gofal.Adfyfyrio ar ddulliau o weithio amlddisgyblaethol a rhyngddisgyblaethol rhwng gweithwyr gofal iechyd proffesiynol, datblygwyr systemau a rhanddeiliaid er mwyn optimeiddio datblygiad a gweithrediad strategaeth ddigidol yn y sector iechyd a gofal cymdeithasol.

CYNNWYS DANGOSOL

- Y mentrau, gyrwyr a chyfyngiadau polisi sy'n effeithio ar gynllunio a chyflwyno gwasanaethau ym maes iechyd a gofal cymdeithasol sy'n gysylltiedig â strategaeth a phensaernïaeth technoleg ddigidol.Cylch oes dylunio a datblygu system wybodaeth (gan gynnwys y camau cynllunio, creu, profi a gweithredu boed yn ddull unionlun neu ailadroddol).Cylch oes manyleb a chaffael system wybodaeth gan gyflenwyr masnachol.Dulliau o asesu diogelwch ac effeithiolrwydd systemau gwybodaeth (e.e. defnyddioldeb, perfformiad, natur gosteffeithiol) a chynnal diogelwch cleifion (h.y. preifatrwydd data, cyfrinachedd cleifion a defnyddwyr, diogelwch a chywirdeb gan ddilyn safonau cyffredin cyfredol).
- Gweithio mewn partneriaeth a'r effaith ar brif rinweddau system (e.e. gallu i dyfu, gallu i'w chynnal a'i chadw, perfformiad, strwythur, argaeledd) wrth ddylunio a datblygu systemau gwybodaeth (e.e. cofnodion iechyd electronig)
- Safonau technoleg gwybodeg iechyd a gofal (gan gynnwys systemau codio, strwythurau data, diogelwch data a phreifatrwydd).

Dyraniad Amser Astudio

Mae’r amser astudio ar gyfer y modwl wedi ei rannu fel a ganlyn:

Math o weithgaredd	**Oriau**	**Canran**
Dysgu wedi’i amserlennu	30	15%
Dysgu’n annibynnol	170	85%
Dysgu drwy leoliadau		
CYFANSWM	**200**	**100%**

ASESU

Elfen Asesu 1 (*Ticiwch un*)

☐ **Arholiad ysgrifenedig** ☒ **Gwaith cwrs** ☐ **Ymarferol**

Dull asesu	**Maint**	**Pwysiad**
Gweledigaeth a Glasbrint o Strategaeth Ddigidol	3500 o eiriau	75%

Elfen Asesu 2 (*Ticiwch un*)

☐ **Arholiad ysgrifenedig** ☒ **Gwaith cwrs** ☐ **Ymarferol**

Dull asesu	**Maint**	**Pwysiad**
Adroddiad Adfyfyriol: Gweithio Aml-randdeiliad	1500 o eiriau	25%

Crynodeb o’r Asesiad

Math o weithgaredd	**Canran**
Arholiad ysgrifenedig	
Gwaith cwrs	100%
Ymarferol	
CYFANSWM	**100%**

RHESTR DDARLLEN DDANGOSOL

Cod y Modwl	**BMDS7007C**	
Teitl y Modwl	**Gwella Iechyd a Llesiant gan Ddefnyddio Sgiliau Digidol**	
Categori	**Eitemau'r Rhestr Ddarllen**	**Electronig***
Hanfodol	National Audit Office, (2020). *Digital Transformation in the NHS.* Available from: https://www.nao.org.uk/report/the-use-of-digital-technology-in-the-nhs/	☒
Hanfodol	NHS Providers, (2021). *Building a Digital Strategy.* Available from: https://nhsproviders.org/building-a-digital-strategy	☒
Pellach	NHS England, (2015). *NHS Interoperability Handbook.* Available from: https://www.england.nhs.uk/wp-content/uploads/2017/03/interoperabilty-handbk.pdf	☒
Pellach	Health Level Seven, (2021). *FHIR Overview – Clinicians.* Available from: https://hl7.org/fhir/overview-clinical.html	☒
Pellach	SNOMED International, (2022). *SNOMED CT Five Step Briefing*. Available from: https://www.snomed.org/snomed-ct/five-step-briefing	☒
Pellach	FEDIP, 2021. *The FEDIP Consultation: Becoming the Profession.* Available from: https://www.fedip.org/	☒
Pellach	Davies, A. et al. (2021). Development of a core competency framework for clinical informatics. *BMJ Health & Care Informatics,* 28:e100356. doi: 10.1136/bmjhci-2021-100356	☒

Module Code	**BMDS7002**
Title	**Service Transformation through People**
Date	**24/02/2021**
Level	**7**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

To explore the human, socio-technical and organisational factors that need to be considered when working to design and develop usable and effective systems in health and care fields

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Demonstrate application of change/quality management methodologies, tools and techniques to informatics projects/programmes

- Critically evaluate the organisational and human factor challenges to effective use of health information systems and technologies in order to ensure maximum user engagement and widespread adoption

INDICATIVE CONTENT

- Factors to be considered in change management, including overcoming resistance, the tools and techniques in the implementation of new processes or informatics systems within clinical practice and/or research
- Individuals factors (workflow, needs, culture and organisational strategy) and impact upon systems (e.g., electronic health records, systems to manage long term conditions to personal wellbeing applications, or those that focus on data)
- Informatics as an enabler of great change in the delivery of health and social care
- Importance of service user/citizen involvement and engagement, and stakeholders influencing development and funding of clinical informatics projects and/or programmes at local or national level
- Role of the digital professional as the convenor and translator between stakeholders
- Components for successful innovation and its adoption and/or scalability into other healthcare contexts/organisations
- Relationship of change management initiatives to required resources to informatics for service redesign to improve delivery of health and social care and patient safety
- Concepts of quality improvement in operations and performance improvement

Study time allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	30	15%
Independent learning	170	85%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1 ***(Tick one)***

☐ **Written exam** ☐ **Coursework** ☒ **Practical**

Mode of assessment	Volume	Weighting
Industry e-Portfolio of Work	4 components (5,000 words equivalent)	100%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	
Practical	100%
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	BMDS7002	
Module Title	Service Transformation through People	
Classification	Reading List entry	Electronic*
Essential	Canyon, D. V. (2012) Crisis management teams in health organisations. Journal of Business Continuity & Emergency Planning. Henry Stewart Publications LLP, 2012, Vol.5 (4), p.365-373	☒
Essential	CCW (2015) Code of Practice for Social Care Workers	☒
Further	Horne, T., & Wootton, S., (2014) *Managing public services - implementing changes : a thoughtful approach to the practice of management.* 2nd Ed. Abingdon, Oxon : Routledge 2014	☐
Further	**Journals** Human Resource Management Journal Journal of Managerial Psychology People Management Journal Management Today Public Service Review	☒
Further	**Websites** www.dti.gov.uk/bestpractice/management.leadership.ht. www.dh.gov.uk www.leadership-he.com www.organisationalpsychology.com www.wales.gov.uk http://www.publicservice.co.uk/pub_selectissue.asp?publication=Health%20and%20Social%20Care	☒

Cod y Modwl	**BMDS7002C**
Teitl	**Newid Gwasanaethau drwy Bobl**
Dyddiad	**24/02/2021**
Lefel	**7**
Credydau	**20**
Rhagofynion	**Dim**

AMCAN(ION)

Archwilio'r ffactorau dynol, technegol-gymdeithasol a sefydliadol y mae angen eu hystyried wrth weithio i ddylunio a datblygu systemau defnyddiol ac effeithiol ym meysydd iechyd a gofal

DEILLIANNAU DYSGU

Ar ôl cwblhau'r modwl hwn yn llwyddiannus, dylai'r myfyriwr allu:

- Arddangos cymhwyso methodolegau, offer a thechnegau rheoli newid/ansawdd at brosiectau/rhaglenni gwybodeg

- Gwerthuso'n feirniadol yr heriau sefydliadol a dynol i ddefnydd effeithiol o systemau a thechnolegau gwybodaeth iechyd er mwyn sicrhau bod defnyddwyr yn ymgysylltu i'r eithaf a bod y systemau a'r technolegau'n cael eu mabwysiadu'n eang

CYNNWYS DANGOSOL

- Ffactorau i'w hystyried wrth reoli newid, gan gynnwys goresgyn gwrthwynebiad, yr offer a'r technegau wrth weithredu prosesau neu systemau gwybodeg newydd o fewn arfer clinigol a/neu ymchwil Ffactorau unigol (llif gwaith, anghenion, diwylliant a strategaeth sefydliadol) a'r effaith ar systemau (e.e., cofnodion iechyd electronig, systemau i reoli cyflyrau hirdymor i gymwysiadau llesiant personol, neu'r rheini sy'n canolbwyntio ar ddata)
- Gwybodeg fel galluogwr newid mawr yn nulliau cyflwyno iechyd a gofal cymdeithasol
- Pwysigrwydd cyfranogiad ac ymgysylltiad defnyddwyr gwasanaethau/dinasyddion, a rhanddeiliaid yn dylanwadu ar ddatblygu a chyllido prosiectau a/neu raglenni gwybodeg glinigol ar lefel leol neu genedlaethol
- Rôl y gweithiwr digidol proffesiynol fel y cynullydd a'r cyfieithydd rhwng rhanddeiliaid Elfennau ar gyfer arloesi llwyddiannus a'i fabwysiadu a/neu ei allu i ymestyn i mewn i gyd-destunau/sefydliadau gofal iechyd eraill
- Perthynas mentrau rheoli newid ag adnoddau sydd eu hangen ar wybodeg er mwyn ail-ddylunio gwasanaethau i wella dulliau cyflwyno iechyd a gofal cymdeithasol a diogelwch cleifion
- Cysyniadau gwella ansawdd o ran gweithrediadau a gwella perfformiad

Dyraniad Amser Astudio

Mae'r amser astudio ar gyfer y modwl wedi ei rannu fel a ganlyn:

Math o weithgaredd	**Oriau**	**Canran**
Dysgu wedi'i amserlennu	30	15%
Dysgu annibynnol	170	85%
Dysgu drwy leoliadau		
CYFANSWM	**200**	**100%**

ASESU

Elfen Asesu 1 (*Ticiwch un*)

☐ **Arholiad ysgrifenedig** ☐ **Gwaith cwrs** ☒ **Ymarferol**

Dull Asesu	**Maint**	**Pwysiad**
E-bortffolio o Waith yn y Diwydiant	4 elfen (cyfwerth â 5,000 o eiriau)	100%

Crynodeb o'r Asesiad

Math o weithgaredd	**Canran**
Arholiad ysgrifenedig	
Gwaith cwrs	
Ymarferol	100%
CYFANSWM	**100%**

RHESTR DDARLLEN DDANGOSOL

Cod y Modwl	**BMDS7002C**	
Teitl y Modwl	**Newid Gwasanaethau drwy Bobl**	
Categori	**Eitemau'r Rhestr Ddarllen**	**Electronig***
Hanfodol	Canyon, D. V. (2012) Crisis management teams in health organisations. Journal of Business Continuity & Emergency Planning. Henry Stewart Publications LLP, 2012, Vol.5 (4), p.365-373	☒
Hanfodol	CCW (2015) Code of Practice for Social Care Workers	☒
Pellach	Horne, T., & Wootton, S., (2014) *Managing public services - implementing changes : a thoughtful approach to the practice of management.* 2nd Ed. Abingdon, Oxon : Routledge 2014	☐
Pellach	**Cyfnodolion** Human Resource Management Journal Journal of Managerial Psychology People Management Journal Management Today Public Service Review	☒
Pellach	**Gwefannau** www.dti.gov.uk/bestpractice/management.leadership.ht. www.dh.gov.uk www.leadership-he.com www.organisationalpsychology.com www.wales.gov.uk http://www.publicservice.co.uk/pub_selectissue.asp?publication=Health%20and%20Social%20Care	☒

Module Code	**BMDS7003**
Title	**Decision-making in Health and Social Care Settings**
Date	**24/02/2021**
Level	**7**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

To explore the different types of data that health systems collect and process to allow informed clinical, health and social care decisions to be made relating to individuals and populations. To ensure on-going improvement across organisations and health and social care economies

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Demonstrate a systematic, extensive and comparative knowledge and understanding of decision-support systems as a whole and their links to specialist aspects.

- Critically evaluate how improved decision-making enhances the service user's experience

INDICATIVE CONTENT

- The role of digital systems in supporting decision-making.
- Models for decision-making
- Evidence-based practice and use of guidelines and care pathways across different healthcare settings
- Types of clinical decision support tools (e.g., computer interpretable guidelines), strengths and weaknesses
- Best practice and approaches used to translate clinical pathways and guidelines into decision support tools (including how information is accessed, sources of information, integration into systems)
- Application of clinical decision support tools to individuals and/or populations
- Core concepts and impact of implementation on behaviour, workflow and decision-making and impact on next iteration or usage
- Models for effective knowledge acquisition, storage and dissemination, including strengths and limitations
- Service user/citizen access to health and care records and the implications on the nature of relationship between healthcare professionals and patient
- Using health data sources to empower service users to make decisions about self-care and share in the decision-making

Study Time Allocation
The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	30	15%
Independent learning	170	85%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1 ***(Tick one)***

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Written Assignment	5,000 words	100%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	BMDS7003	
Module Title	Decision-making in Health and Social Care Settings	
Classification	Reading List entry	Electronic*
Essential	Roijers, D.M. and Whiteson, S. and Brachman, R. and Stone, P. (2017) Multi-Objective Decision Making, Second edition. Morgan & Claypool Publishers	☒
Essential	Pot, Mirjam, 2019. The Gender of Biomedical Data: Challenges for Personalised and Precision Medicine. *Somatechnics*, 9(2/3), pp.170–188.	☒
Essential	Thompson C, Cullum N, McCaughan D*, et al (*2004) Nurses, information use, and clinical decision making—the real-world potential for evidence-based decisions in nursing *Evidence-Based Nursing*;**7:**68-72.	☒
Essential	Topol, E., 2019. *Deep medicine: how artificial intelligence can make healthcare human again*. Hachette UK.	☒
Further	Bhatti, Uzair Aslam, 2019. Recommendation system using feature extraction and pattern recognition in clinical care systems. *Enterprise Information Systems*, 13(3), pp.329–352.	☒
Further	McCartney, M., 2018. Margaret McCartney: AI in medicine must be rigorously tested. BMJ, 361, p.k1752.	☒
Further	IEEE Symposium on Computational Intelligence in Multi-Criteria Decision Making Corporate Author, 2006. *2007 IEEE Symposium on Computational Intelligence in Multi-Criteria Decision Making, Honolulu, HI, 1-5 April 2007*,	☒
Further	Annis, Jeffrey, 2020. Combining convolutional neural networks and cognitive models to predict novel object recognition in humans. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, pp.Journal of Experimental Psychology: Learning, Memory, and Cognition, 2020.	☒
Further	Khatod, Neha, 2019. Symmetric fuzzy divergence measure, decision making and medical diagnosis problems. *Journal of Intelligent & Fuzzy Systems*, 36(6), pp.5721–5730.	☒
Further	Henshall C, Cipriani A, Ruvolo D*, et al (2019)* Implementing a digital clinical decision support tool for side effects of antipsychotics: a focus group study *Evidence-Based Mental Health*; 22:56-60.	☒
Further	Weiner, M., & Biondich, P. (2006). The influence of information technology on patient-physician relationships. *Journal of general internal medicine*, *21 Suppl 1*(Suppl 1), S35–S39. https://doi.org/10.1111/j.1525-1497.2006.00307.x	☒

Cod y Modwl	**BMDS7003C**
Teitl	**Gwneud Penderfyniadau mewn Lleoliadau Iechyd a Gofal Cymdeithasol**
Dyddiad	**24/02/2021**
Lefel	**7**
Credydau	**20**
Rhagofynion	**Dim**

AMCAN(ION)

Archwilio'r gwahanol fathau o ddata y mae systemau iechyd yn eu casglu a'u prosesu er mwyn caniatáu gwneud penderfyniadau gwybodus ym meysydd clinigol, iechyd a gofal cymdeithasol yng nghyswllt unigolion a phoblogaethau. Sicrhau gwelliannau parhaus ar draws sefydliadau ac economïau iechyd a gofal cymdeithasol

DEILLIANNAU DYSGU

Ar ôl cwblhau'r modwl hwn yn llwyddiannus, dylai'r myfyriwr allu:

- Arddangos gwybodaeth a dealltwriaeth systematig, helaeth a chymharol o systemau cefnogi penderfyniadau fel cyfanwaith a'u cysylltiadau ag agweddau arbenigol.

- Gwerthuso'n feirniadol sut mae gwneud gwell penderfyniadau'n cyfoethogi profiadau defnyddwyr gwasanaethau

CYNNWYS DANGOSOL

- Rôl systemau digidol wrth gefnogi gwneud penderfyniadau.
- Modelau gwneud penderfyniadau
- Arfer ar sail tystiolaeth a'r defnydd o ganllawiau a llwybrau gofal ar draws gwahanol leoliadau gofal iechyd
- Mathau o offer cefnogi penderfyniadau clinigol (e.e. canllawiau mae modd eu dehongli gyda chyfrifiadur), cryfderau a gwendidau
- Arfer gorau a dulliau a ddefnyddir i drosi llwybrau a chanllawiau clinigol yn offer i gefnogi penderfyniadau (gan gynnwys sut mae cael mynediad i wybodaeth, ffynonellau gwybodaeth, integreiddio â systemau) Cymhwyso offer cefnogi penderfyniadau clinigol i unigolion a/neu boblogaethau
- Cysyniadau craidd ac effaith gweithredu ar ymddygiad, llif gwaith a gwneud penderfyniadau a'r effaith ar y fersiwn nesaf neu ar ddefnydd
- Modelau ar gyfer caffael, storio a lledaenu gwybodaeth yn effeithiol, gan gynnwys cryfderau a chyfyngiadau Mynediad defnyddwyr gwasanaethau/dinasyddion at gofnodion iechyd a gofal a'r goblygiadau o ran natur y berthynas rhwng gweithwyr gofal iechyd proffesiynol a chleifion
- Defnyddio ffynonellau data iechyd i rymuso defnyddwyr gwasanaethau i wneud penderfyniadau ynghylch hunan-ofal a rhannu yn y broses o wneud penderfyniadau

Dyraniad Amser Astudio
Mae'r amser astudio ar gyfer y modwl wedi ei rannu fel a ganlyn:

Math o weithgaredd	Oriau	Canran
Dysgu wedi'i amserlennu	30	15%
Dysgu'n annibynnol	170	85%
Dysgu drwy leoliadau		
CYFANSWM	**200**	**100%**

ASESU

Elfen Asesu 1 (*Ticiwch un)*

☐ **Arholiad ysgrifenedig** ☒ **Gwaith cwrs** ☐ **Ymarferol**

Dull asesu	Maint	Pwysiad
Aseiniad Ysgrifenedig	5,000 o eiriau	100%

Crynodeb o'r Asesiad

Math o weithgaredd	Canran
Arholiad ysgrifenedig	
Gwaith cwrs	100%
Ymarferol	
CYFANSWM	**100%**

RHESTR DDARLLEN DDANGOSOL

Cod y Modwl	**BMDS7003C**	
Teitl y Modwl	**Gwneud Penderfyniadau mewn Lleoliadau Iechyd a Gofal Cymdeithasol**	
Categori	**Eitemau'r Rhestr Ddarllen**	**Electronig***
Hanfodol	Roijers, D.M. and Whiteson, S. and Brachman, R. and Stone, P. (2017) Multi-Objective Decision Making, Second edition. Morgan & Claypool Publishers	☒
Hanfodol	Pot, Mirjam, 2019. The Gender of Biomedical Data: Challenges for Personalised and Precision Medicine. *Somatechnics*, 9(2/3), pp.170–188.	☒
Hanfodol	Thompson C, Cullum N, McCaughan D*, et al (*2004) Nurses, information use, and clinical decision making—the real-world potential for evidence-based decisions in nursing *Evidence-Based Nursing*;**7:**68-72.	☒
Hanfodol	Topol, E., 2019. *Deep medicine: how artificial intelligence can make healthcare human again*. Hachette UK.	☒
Pellach	Bhatti, Uzair Aslam, 2019. Recommendation system using feature extraction and pattern recognition in clinical care systems. *Enterprise Information Systems*, 13(3), pp.329–352.	☒
Pellach	McCartney, M., 2018. Margaret McCartney: AI in medicine must be rigorously tested. BMJ, 361, p.k1752.	☒
Pellach	IEEE Symposium on Computational Intelligence in Multi-Criteria Decision Making Corporate Author, 2006. *2007 IEEE Symposium on Computational Intelligence in Multi-Criteria Decision Making, Honolulu, HI, 1-5 April 2007*,	☒
Pellach	Annis, Jeffrey, 2020. Combining convolutional neural networks and cognitive models to predict novel object recognition in humans. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, pp.Journal of Experimental Psychology: Learning, Memory, and Cognition, 2020.	☒
Pellach	Khatod, Neha, 2019. Symmetric fuzzy divergence measure, decision making and medical diagnosis problems. *Journal of Intelligent & Fuzzy Systems*, 36(6), pp.5721–5730.	☒
Pellach	Henshall C, Cipriani A, Ruvolo D*, et al (2019)* Implementing a digital clinical decision support tool for side effects of antipsychotics: a focus group study *Evidence-Based Mental Health*; 22:56-60.	☒
Pellach	Weiner, M., & Biondich, P. (2006). The influence of information technology on patient-physician relationships. *Journal of general internal medicine*, *21 Suppl 1*(Suppl 1), S35–S39. https://doi.org/10.1111/j.1525-1497.2006.00307.x	☒

Module Code	**BMDS7004**
Title	**Data Analytics**
Date	**24/02/2021**
Level	**7**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

To explore the contemporary health and care analytical landscape and methodologies and translate/communicate the visualisations to a range of non-expert and expert audiences in order to drive the redesign of health care delivery models

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Demonstrate a systematic, extensive and comparative knowledge and understanding of the use of metrics and descriptive statistics (e.g. probability, predictive modelling and machine learning techniques).

- Apply metrics and/or descriptive statistics to discover patterns in recorded data and solve health, care, clinical practice and/or research problems

INDICATIVE CONTENT

- Key attributes of data and information (including quality, integrity, accuracy, timeliness and appropriateness) and limitations within the context of intended use
- Descriptive statistics and metrics
- Ranges of visualisations used to present data analyses and data inter-relationships and dependencies among the various health information systems (e.g., decision support systems, electronic health records, order entry, registries, etc.)
- Characteristics and uses of health data and various methodologies and tools available to analyse, interpret and visualise data
- Data quality and effects on analysis
- Latest techniques (e.g. data mining and machine learning)
- Challenges in health and clinical settings (e.g., population data and algorithmic bias, explainability of results, robust regulation and quality control, metrics vs clinical applicability, ethics and unintended negative consequences)
- Opportunities and challenges with using real-world health data for analysis and to drive decision-making
- Quality analysis and organising and transforming data into reliable and meaningful information to support decision making - presenting information in a way that is effective for users' decision making, and user capability

Study Time Allocation
The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	30	15%
Independent learning	170	85%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1 ***(Tick one)***

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Data analysis report	5000 words equivalent	100%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**BMDS7004**	
Module Title	**Data Analytics**	
Classification	**Reading List entry**	**Electronic***
Essential	Nimon, Kim, 2019. Descriptive Statistics From Published Research: A Readily Available Alternative to Raw Data to Assess Analytic Reproducibility and Robustness. *Advances in Developing Human Resources*, 21(4), pp.421–438.	☒
Essential	Alemi, F. (2019), Data Science for Healthcare: Methodologies and Applications, Health Administration Press}	☒
Essential	Baer, T. (2019) Understand, Manage, and Prevent Algorithmic Bias: A Guide for Business Users and Data Scientists, Apress	☒
Further	Guetterman TC (2019) Basics of statistics for primary care research *Family Medicine and Community Health* ;**7:**e000067. doi:10.1136/fmch-2018-000067	☒
Further	Kirk, A., 2019. *Data visualisation : a handbook for data driven design* 2nd ed.,	☒
Further	Chen, H., Hailey, D., Wang, N. and Yu, P., 2014. A review of data quality assessment methods for public health information systems. *International journal of environmental research and public health*, *11*(5), pp.5170-5207.	☒
Further	Tu, Y.K. and Gilthorpe, M. (2016) Statistical Thinking in Epidemiology: CRCPress	☒
Further	https://www.who.int/topics/statistics/en/	☒
Further	https://pws.nhs.wales	☒
Further	Kranzler, J.H. (2017) *Statistics for the Terrified (6th Ed.)*, Pearson	☒
Further	Few, S. (2012), *Show Me The Numbers*, Analytics Press, Burlingame, CA.	☐
Further	Tufte, E. (2001) *The Visual Display of Quantitative Information (2nd Ed.)* Graphics Press USA	☐
Further	Tufte, E. (1997), *Visual Explanations, Images and Quantities, Evidence and Narrative.* Graphics Press	☐
Further	Tufte, E. (1990) *Envisioning Information*, Graphics Press USA	☐

Cod y Modwl	**BMDS7004C**
Teitl	**Dadansoddeg Data**
Dyddiad	**24/02/2021**
Lefel	**7**
Credydau	**20**
Rhagofynion	**Dim**

AMCAN(ION)

Archwilio tirwedd ddadansoddol gyfoes iechyd a gofal a methodolegau a throsi/cyfleu'r deongliadau i ystod o gynulleidfaoedd arbenigol ac anarbenigol er mwyn gyrru ail-ddylunio modelau cyflwyno gofal iechyd

DEILLIANNAU DYSGU

Ar ôl cwblhau'r modwl hwn yn llwyddiannus, dylai'r myfyriwr allu:

- Arddangos gwybodaeth a dealltwriaeth systematig, helaeth a chymharol o'r defnydd o fetrigau ac ystadegau disgrifiadol (e.e. tebygolrwydd, modelu rhagfynegi a thechnegau dysgu peirianyddol).

- Cymhwyso metrigau a/neu ystadegau disgrifiadol er mwyn darganfod patrymau mewn data a gofnodwyd a datrys problemau iechyd, gofal, arfer clinigol a/neu ymchwil

CYNNWYS DANGOSOL

- Priodoleddau allweddol data a gwybodaeth (yn cynnwys ansawdd, cywirdeb, manylder, prydlondeb a phriodoldeb) a chyfyngiadau o fewn cyd-destun y defnydd arfaethedig Ystadegau disgrifiadol a metrigau
- Ystodau deongliadau a ddefnyddir i gyflwyno dadansoddiadau data a chydberthnasau data a dibyniaethau ymhlith y systemau gwybodaeth iechyd amrywiol (e.e., systemau cefnogi penderfyniadau, cofnodion iechyd electronig, cofnodi archebion, cofrestrfeydd, ac ati)
- Nodweddion a defnyddiau data iechyd a'r amryw fethodolegau ac offer sydd ar gael i ddadansoddi, dehongli a delweddu data
- Ansawdd data ac effeithiau ar ddadansoddi
- Technegau diweddaraf (e.e. cloddio data a dysgu peirianyddol)
- Heriau mewn lleoliadau iechyd a chlinigol (e.e., data poblogaethau a thuedd algorithmig, gallu i esbonio canlyniadau, rheoleiddio a rheoli ansawdd cadarn, metrigau yn erbyn cymhwysedd clinigol, moeseg a chanlyniadau negyddol anfwriadol)
- Cyfleoedd a heriau wrth ddefnyddio data iechyd o'r byd go iawn ar gyfer dadansoddi ac i yrru gwneud penderfyniadau
- Dadansoddi ansawdd a threfnu a thrawsnewid data yn wybodaeth ddibynadwy ac ystyrlon i gefnogi gwneud penderfyniadau – cyflwyno gwybodaeth mewn ffordd sy'n effeithiol o ran proses defnyddwyr o wneud penderfyniadau, a gallu defnyddwyr

Dyraniad Amser Astudio
Mae'r amser astudio ar gyfer y modwl wedi ei rannu fel a ganlyn:

Math o weithgaredd	Oriau	Canran
Dysgu wedi'i amserlennu	30	15%
Dysgu'n annibynnol	170	85%
Dysgu drwy leoliadau		
CYFANSWM	**200**	**100%**

ASESU

Elfen Asesu 1 (*Ticiwch un*)

☐ **Arholiad ysgrifenedig** ☒ **Gwaith cwrs** ☐ **Ymarferol**

Dull asesu	Maint	Pwysiad
Adroddiad dadansoddi data	cyfwerth â 5000 o eiriau	100%

Crynodeb o'r Asesiad

Math o weithgaredd	Canran
Arholiad ysgrifenedig	
Gwaith cwrs	100%
Ymarferol	
CYFANSWM	**100%**

RHESTR DDARLLEN DDANGOSOL

Cod y Modwl	**BMDS7004C**	
Teitl y Modwl	**Dadansoddeg Data**	
Categori	**Eitemau'r Rhestr Ddarllen**	**Electronig***
Hanfodol	Nimon, Kim, 2019. Descriptive Statistics From Published Research: A Readily Available Alternative to Raw Data to Assess Analytic Reproducibility and Robustness. *Advances in Developing Human Resources*, 21(4), pp.421–438.	☒
Hanfodol	Alemi, F. (2019), Data Science for Healthcare: Methodologies and Applications, Health Administration Press}	☒
Hanfodol	Baer, T. (2019) Understand, Manage, and Prevent Algorithmic Bias: A Guide for Business Users and Data Scientists, Apress	☒
Pellach	Guetterman TC (2019) Basics of statistics for primary care research *Family Medicine and Community Health* ;**7:**e000067. doi:10.1136/fmch-2018-000067	☒
Pellach	Kirk, A., 2019. *Data visualisation : a handbook for data driven design* 2nd ed.,	☒
Pellach	Chen, H., Hailey, D., Wang, N. and Yu, P., 2014. A review of data quality assessment methods for public health information systems. *International journal of environmental research and public health*, *11*(5), pp.5170-5207.	☒
Pellach	Tu, Y.K. and Gilthorpe, M. (2016) Statistical Thinking in Epidemiology: CRCPress	☒
Pellach	https://www.who.int/topics/statistics/en/	☒
Pellach	https://pws.nhs.wales	☒
Pellach	Kranzler, J.H. (2017) *Statistics for the Terrified (6th Ed.)*, Pearson	☒
Pellach	Few, S. (2012), *Show Me The Numbers*, Analytics Press, Burlingame, CA.	☐
Pellach	Tufte, E. (2001) *The Visual Display of Quantitative Information (2nd Ed.)* Graphics Press USA	☐
Pellach	Tufte, E. (1997), *Visual Explanations, Images and Quantities, Evidence and Narrative.* Graphics Press	☐
Pellach	Tufte, E. (1990) *Envisioning Information*, Graphics Press USA	☐

Module Code	**BMDS7005**
Title	**Major Project for Digital Professionals**
Date	**24/02/2021**
Level	**7**
Credits	**60**
Pre-Requisites	**None**

AIM(S)

- To develop a critical and systematic understanding of the application of research methodologies, and an ability to frame a research proposal.
- To conduct the research and develop a systematic understanding of how to report research results in written format to an academic and/or professional audience, and to further develop the learner's capacity for critical analysis and independent thought.

LEARNING OUTCOMES

Upon the successful completion of this module, the learner should be able to:

- prepare a research/independent study proposal that provides evidence to justify the proposed study; that the way the proposal addresses the topic is both appropriate, feasible and ethical in terms of intended activities, outcomes and resources and thus establishes its importance to both academic and professional communities;
- plan, manage and execute an in-depth research, inquiry or investigation with a digital health and care focus by applying the principles of research design and appropriate methodology selection to the formulation of a research question or aims including, where appropriate, formal hypotheses that can be tested, and the selection of appropriate research methods;
- demonstrate the ability to conduct research under supervision in a digital health and care context including the ability to critically review published literature, show conceptual and theoretical understanding, identify research problems, use project management skills to budget, manage time and other resources, handle data, interpret results and disseminate findings in a way that is consistent with professional practice and normal principles of research ethics;
- exhibit the analytical, numerical, literacy, communication and digital skills to enable critical research to be undertaken and be able to apply those transferable skills to develop research-based inquiry in future settings.

INDICATIVE CONTENT

- The complexities and practical issues of research: independent learning and development; stakeholder interests and ethical considerations; the investigative process; philosophical considerations; the use of theory; the importance of on-going clear communication.
- The importance of clear aims and objectives: project management, use of project management skills to budget, manage time and other resources, building and managing relationships; learning and reflection, reviewing and evaluating.

- Exploring the literature, writing a literature review, critically reviewing published literature, showing conceptual and theoretical understanding, identifying research problems and questions.
- Choosing a research method, ethical considerations, data collection and sampling, data analysis and interpreting results, reliability and validity of data, evidence-based approach; disseminating findings in a way that is consistent with professional business and management practice. Drawing valid conclusions and recommendations. Reflecting on the research process and outcomes and the learning experience.

Notes

Learners will be provided with research methodology workshops (20 hours), the outcome of which will be a Research Proposal that details a methodologically sound study that can be conducted in the time allocated. This proposal must be approved by the supervisory team prior to commencement of the research but carries no weighting in the allocation of Major Project marks.

The learner will complete the UWTSD E1 Ethical Approval Form to ensure that their project has been held to rigorous ethical standards by the University.

The student will conduct their study with ongoing support from an individual project tutor (10 hours).

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	30	5%
Independent learning	570	95%
Placement learning	0	0%
TOTAL	**600**	**100%**

ASSESSMENT

Assessment Component 1

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Major Project	15,000 words	100%

Assessment Summary

Activity type	Percentage
Written exam	0%
Coursework	100%
Practical	0%
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**BMDS7005**	
Module Title	**Major Project for Digital Professionals**	
Classification	**Reading List entry**	**Electronic***
Essential	Essential texts relevant to the area(s) of study will be identified collaboratively with learners by individual project tutors.	
Essential	Costley, C., Elliott, G., and Paul Gibbs (2012) Doing Work Based Research, Approaches to Enquiry for Insider-Researchers, London: Sage.	☒
Essential	Saunders, M., Lewis, P. and Thornhill, A. (2016) *Research Methods for Business Students*. 7th edn. FT/Prentice Hall: Harlow.	☒
Essential	McCormac, C. and Davis, J. (2015) *Research Project Success: The Essential Guide for Science and Engineering Students*, Cambridge: Royal Society of Chemistry	☒
Essential	Greenfield, T. (2016) *Research Methods for Postgraduates,* London: Arnold	☒
Further	Dawson, C. W. (2009) *Projects in Computing and Information Systems: a Student's Guide, 2nd Edition,* Boston: Addison-Wesley	☒
Further	Robson, C (2016) *Real World Research.* 4th edn. John Wiley and Sons: Chichester.	☐
Further	Gray, D. (2017) *Doing Research in the Business World.* London: Sage.	☐
Further	Collis, J. and Hussey, R. (2013) *Business Research, A Practical Guide for Undergraduate and Post Graduate Students*. 4th ed. Palgrave Macmillan: London.	☒
Further	Creswell, J. W. (2018) *Research design: qualitative, quantitative and mixed methods approaches*. Sage.	☐
Further	Bryman, A. and Bell, E. (2015) *Business Research Methods*. Oxford OUP.	☒
Further	Pallant, J. (2016) *SPSS Survival Manual.* Allen and Unwin.	☐
Further	Kranzler, J. H. (2017) *Statistics for the Terrified,* Upper Saddle River: Prentice Hall	☒
Further	Sherbaum, C. and Shockley, K. (2015) *Analysing Quantitative Data for Business and Management Students*. Sage.	☐
Further	Duignan, J. (2014) *Quantitative Methods for Business Research using Microsoft EXCEL*. Cengage Learning.	☐
Further	Field, A. (2018) *Discovering Statistics using IBM SPSS Statistics*. 5th edn. London: Sage.	☐
Further	Stewart, C.J. and Cash, W.B. Jr (2017) *Interviewing: Principles and Practices*. 15th edn. New York: McGraw-Hill.	☐

Module Code	BMDS7005	
Module Title	**Major Project for Digital Professionals**	
Classification	**Reading List entry**	**Electronic***
Further	Yin, R. K. (2014) *Case Study Research: Design and Methods.* 5th edn. Thousand Oaks, CA: Sage.	☐
Further	Cottrell, S. (2011) *Critical Thinking Skills: Developing Effective Analysis and Argument*. 2nd edn. Palgrave Study Guides, Palgrave Macmillan: Basingstoke.	☐
Further	Denscombe, M. (2012) *Research Proposals: A Practical Guide*. Open University Press: Maidenhead.	☐
Further	Levin, P. (2005) *Excellent Dissertations*. Open University Press.	☐

Cod y Modwl	**BMDS7005C**
Teitl	**Prosiect Mawr i Weithwyr Digidol Proffesiynol**
Dyddiad	**24/02/2021**
Lefel	**7**
Credydau	**60**
Rhagofynion	**Dim**

AMCAN(ION)

- Datblygu dealltwriaeth feirniadol a systematig o gymhwyso methodolegau ymchwil a gallu i lunio cynnig ymchwil.
- Cynnal yr ymchwil a datblygu dealltwriaeth systematig o sut i adrodd ar ganlyniadau ymchwil mewn fformat ysgrifenedig i gynulleidfa academaidd a/neu broffesiynol, a datblygu ymhellach allu'r dysgwr i ddadansoddi'n feirniadol a meddwl yn annibynnol.

DEILLIANNAU DYSGU

Ar ôl cwblhau'r modwl hwn yn llwyddiannus, dylai'r dysgwr allu:

- paratoi cynnig ymchwil/astudiaeth annibynnol sy'n darparu tystiolaeth i gyfiawnhau'r astudiaeth arfaethedig; bod y ffordd y mae'r cynnig yn mynd i'r afael â'r pwnc yn briodol, yn ddichonadwy ac yn foesegol yn nhermau gweithgareddau arfaethedig, canlyniadau ac adnoddau ac felly yn sefydlu'i bwysigrwydd i gymunedau academaidd a phroffesiynol; cynllunio, rheoli a gweithredu ymchwil, ymholiad neu ymchwiliad manwl gyda ffocws ar iechyd a gofal digidol drwy gymhwyso egwyddorion dylunio ymchwil a dethol methodoleg briodol ar gyfer llunio cwestiwn ymchwil neu amcanion gan gynnwys, pan fo'n briodol, ddamcaniaethau ffurfiol y mae modd eu profi, a dethol dulliau ymchwil priodol;
- arddangos y gallu i gynnal ymchwil dan oruchwyliaeth mewn cyd-destun iechyd a gofal digidol gan gynnwys y gallu i adolygu llenyddiaeth gyhoeddedig yn feirniadol, dangos dealltwriaeth gysyniadol a damcaniaethol, dynodi problemau ymchwil, defnyddio sgiliau rheoli prosiect i gyllidebu, rheoli amser ac adnoddau eraill, trin data, dehongli canlyniadau a lledaenu canfyddiadau mewn modd sy'n gyson ag arfer proffesiynol ac egwyddorion arferol moeseg ymchwil;
- arddangos y sgiliau dadansoddol, rhifyddol, llythrennedd, cyfathrebu a digidol i alluogi cynnal ymchwil beirniadol a gallu cymhwyso'r sgiliau trosglwyddadwy hynny i ddatblygu ymholi ar sail ymchwil yn lleoliadau'r dyfodol.

CYNNWYS DANGOSOL

- Cymhlethdodau a materion ymarferol ymchwil: dysgu annibynnol a datblygiad; buddiannau rhanddeiliaid ac ystyriaethau moesegol; y broses ymchwilio; ystyriaethau athronyddol; defnyddio damcaniaethau; pwysigrwydd cyfathrebu eglur parhaus.
- Pwysigrwydd nodau ac amcanion eglur: rheoli prosiectau, defnyddio sgiliau rheoli prosiect i gyllidebu, rheoli amser ac adnoddau eraill, meithrin a rheoli perthnasoedd; dysgu ac adfyfyrio, adolygu a gwerthuso.
- Archwilio'r llenyddiaeth, ysgrifennu adolygiad llenyddiaeth, adolygu llenyddiaeth gyhoeddedig yn feirniadol, dangos dealltwriaeth gysyniadol a damcaniaethol, dynodi problemau a chwestiynau ymchwil.

- Dewis dull ymchwil, ystyriaethau moesegol, casglu data a samplu, dadansoddi data a dehongli canlyniadau, dibynadwyedd a dilysrwydd data, dull yn seiliedig ar dystiolaeth; lledaenu canfyddiadau mewn modd sy'n gyson â busnes proffesiynol ac arfer rheoli. Llunio casgliadau ac argymhellion dilys. Adfyfyrio ar y broses ymchwil a'r canlyniadau a'r profiad dysgu.

Nodiadau

Darperir gweithdai methodolegau ymchwil ar gyfer y dysgwyr (20 awr), a chanlyniad y rhain fydd Cynnig Ymchwil sy'n rhoi manylion astudiaeth sy'n gadarn yn fethodolegol y gellir ei chynnal o fewn yr amser a bennir. Rhaid i'r cynnig hwn gael ei gymeradwyo gan y tîm goruchwylio cyn cychwyn yr ymchwil ond nid yw'n cario unrhyw bwysiad wrth ddyrannu marciau'r Prosiect Mawr.

Bydd y dysgwr yn cwblhau Ffurflen Gais am Gymeradwyaeth Foesegol E1 y Drindod Dewi Sant er mwyn sicrhau bod ei brosiect wedi'i werthuso yn ôl safonau moesegol trwyadl gan y Brifysgol.

Bydd y myfyriwr yn cynnal ei astudiaeth gyda chefnogaeth barhaus gan diwtor prosiect unigol (10 awr).

Dyraniad Amser Astudio

Mae'r amser astudio ar gyfer y modwl wedi ei rannu fel a ganlyn:

Math o weithgaredd	**Oriau**	**Canran**
Dysgu wedi'i amserlennu	30	5%
Dysgu'n annibynnol	570	95%
Dysgu drwy leoliadau	0	0%
CYFANSWM	**600**	**100%**

ASESU

Elfen Asesu 1

☐ **Arholiad ysgrifenedig** ☒ **Gwaith cwrs** ☐ **Ymarferol**

Dull asesu	**Maint**	**Pwysiad**
Prosiect Mawr	15,000 o eiriau	100%

Crynodeb o'r Asesiad

Math o weithgaredd	**Canran**
Arholiad ysgrifenedig	0%
Gwaith cwrs	100%
Ymarferol	0%
CYFANSWM	**100%**

RHESTR DDARLLEN DDANGOSOL

Cod y Modwl	**BMDS7005C**	
Teitl y Modwl	**Prosiect Mawr i Weithwyr Digidol Proffesiynol**	
Categori	**Eitemau'r Rhestr Ddarllen**	**Electronig***
Hanfodol	Nodir testunau hanfodol sy'n berthnasol i'r maes/meysydd astudio yn gydweithredol â'r dysgwyr gan diwtoriaid prosiect unigol.	
Hanfodol	Costley, C., Elliott, G., and Paul Gibbs (2012) Doing Work Based Research, Approaches to Enquiry for Insider-Researchers, London: Sage.	☒
Hanfodol	Saunders, M., Lewis, P. and Thornhill, A. (2016) *Research Methods for Business Students*. 7th edn. FT/Prentice Hall: Harlow.	☒
Hanfodol	McCormac, C. and Davis, J. (2015) *Research Project Success: The Essential Guide for Science and Engineering Students*, Cambridge: Royal Society of Chemistry	☒
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Cod y Modwl	BMDS7005C	
Teitl y Modwl	Prosiect Mawr i Weithwyr Digidol Proffesiynol	
Categori	Eitemau'r Rhestr Ddarllen	Electronig*
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Pellach	Denscombe, M. (2012) *Research Proposals: A Practical Guide*. Open University Press: Maidenhead.	☐
Pellach	Levin, P. (2005) *Excellent Dissertations*. Open University Press.	☐