



Module Details

Title:	Advanced Info Design & Develop	APPROVED
Long Title:	Advanced Info Design & Development	
Module Code:	COMP9095	Duration: 1 Semester
Credits:	10	
NFQ Level:	Expert	
Field of Study:	Computer Science	
Valid From:	Semester 1 - 2022/23 (September 2022)	
Module Delivered In	2 programme(s)	
Next Review Date:	December 2026	
Module Coordinator:	Sean McSweeney	
Module Author:	Eoin ORegan	

Module Description:	As a key area of technical communications, this module focuses on information design and development concepts and skills to enable information developers to design and deliver effective information for advanced systems, including connected and intelligent systems. The module aims to impart theory and practices of designing and developing information for systems governed by Artificial Intelligence, with a particular focus on Natural Language Processing (NLP), in order to deliver information that is personalised to user contexts.
----------------------------	---

Learning Outcomes

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

LO1	Investigate the impact of emerging technologies and machine language processing on information design and delivery
LO2	Determine the impact of automated and Artificial Intelligence systems on information development strategies
LO3	Appraise user context scenarios and multi-dimensional context models
LO4	Design and develop information for multi-dimensional contexts
LO5	Understand conversation design, and develop information using automated systems
LO6	Identify potential ethical and privacy issues related to delivering information via automated machine interfaces

Pre-requisite learning

Module Recommendations
This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named MTU module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).

No recommendations listed

Incompatible Modules
These are modules which have learning outcomes that are too similar to the learning outcomes of this module. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.

No incompatible modules listed

Co-requisite Modules

No Co-requisite modules listed

Requirements

This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.

No requirements listed

Module Content & Assessment

Indicative Content

Impact of emerging technologies

Explain Industry 4.0 and Information 4.0 concepts and impact of artificial intelligence, IoT, automated systems and machine language processing on information design and development.

Machine language processing

Define natural language processing (NLP), natural language understanding (NLU), and natural language generation (NLG). Develop high-level understanding of how NLP and neural networks work. Explain how NLP impacts information design. Identify challenges of NLP and natural human language.

User context and prediction

Define user context and identify examples. Explain the relationship between information and user context. Understand current research into sentiment analysis and prediction methods. Understand how prediction may be used to drive personalised user information.

Multi-dimensional contexts and information modelling

Define multi-dimensional context. Explain context models. Create strategy for multi-dimensional context models. Build multi-dimensional context models. Map information to user context.

Writing molecular content (micro content)

Understand how molecular content functions in multi-dimensional contexts and user contexts. Design and develop molecular content for user context.

Conversation design

Understand role of conversation design in emerging technologies. Examine rule-based and artificial intelligence systems for conversation design. Provide practical application using automated systems.

Ethics and Privacy

Examine ethical and privacy issues raised by use of automated systems, Artificial Intelligence, IoT, and other emerging technologies. Understand the impact of GDPR and similar regulations on automated systems, including IoT and voice and chatbot technologies.

Assessment Breakdown

%

Course Work

100.00%

Course Work

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Reflective Journal	Participation in required online discussions based on assigned reading and topics to demonstrate understanding and exploration of learning outcome subjects.	1,2,3,4,5,6	10.0	Every Second Week
Project	Design and develop a multi-dimensional context model.	3,4	30.0	Week 6
Project	Develop an automated or AI-driven bot based on multi-dimensional context using principles and best practices of conversation design.	3,4,5,6	60.0	Sem End

No End of Module Formal Examination

Reassessment Requirement

Coursework Only

This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.

The institute reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time				
<i>WorkLoad Type</i>	<i>WorkLoad Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Lecture delivering theory underpinning learning outcomes.	3.0	Every Week	3.00
Tutorial	Tutorial to support learning outcomes.	2.0	Every Week	2.00
Independent & Directed Learning (Non-contact)	Independent study.	9.0	Every Week	9.00
Total Hours				14.00
Total Weekly Learner Workload				14.00
Total Weekly Contact Hours				5.00

Workload: Part Time				
<i>WorkLoad Type</i>	<i>WorkLoad Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Lecture delivering theory underpinning learning outcomes.	3.0	Every Week	3.00
Tutorial	Tutorial to support learning outcomes.	2.0	Every Week	2.00
Independent & Directed Learning (Non-contact)	Independent study.	9.0	Every Week	9.00
Total Hours				14.00
Total Weekly Learner Workload				14.00
Total Weekly Contact Hours				5.00

Module Resources

Recommended Book Resources

- Schwab, K. 2017, *The Fourth Industrial Revolution.*, Penguin Group [ISBN: 978-024130075]
- Nass, C., Brave, S. 2007, *How Voice Activates and Advances the Human-Computer Relationship*, The MIT Press [ISBN: 978-026264065]

Supplementary Book Resources

- Budinski, Kenneth G. 2001, *Engineers Guide to Technical Writing*, ASM International [ISBN: 9780871706935]
- Rude, Carolyn D., Eaton, Angela. 2014, *Technical editing.*, Pearson [ISBN: 9780205786718]
- Markel, M., Selber, Stuart A. 2018, *Technical Communication.*, Macmillan [ISBN: 9781319058616]

This module does not have any article/paper resources

Other Resources

- Website: 2020 *IEEE Style Manual.*, IEEE Publishing Operations
<http://journals.ieeeauthorcenter.ieee.org/wp-content/uploads/sites/7/IEEE-Editorial-Style-Manual-for-Authors-Online-v.04-20-2021.pdf>
- Website: Christiansen S, Iverson C, Flanagan A, et al. 2020, *AMA Manual of Style: A Guide for Authors and Editors. 11th ed.*, Oxford University Press
<https://www.amamanualofstyle.com/>
- Website: 2021 *Microsoft Style Guide.*, Microsoft
<https://docs.microsoft.com/en-us/style-guide/welcome/>

Module Delivered In

Programme Code	<i>Programme Title</i>
CR_KINDD_9	Master of Science in Technical Communication (Approved)
CR_KIDDE_9	Postgraduate Diploma in Science in Technical Communication (Approved)