Title	Cyber Business Process
Long Title	Cyber Business Process
Credits	**5**
NFQ Level	**Expert**
Module Author	Doyle Patricia

Module Description:

This module is designed to provide students with the tools to enable them to create policies and processes supporting the cyber security requirements of their organisation. This module was developed under the Cyber Skills HCI Pillar 3 Project. Please refer to consortium agreement for ownership.

Learning Outcomes

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

LO1 Critically evaluate business process improvement frameworks and methodologies in diverse organisational contexts.

LO2 Critically analyse and synthesise strategies for service development and acquisition, including the integration of AI.

LO3 Appraise testing frameworks and feedback mechanisms for cybersecurity operations and business practices to enhance quality assurance, compliance, and continuous improvement.

LO4 Evaluate performance and effectiveness of cybersecurity operations and business processes to inform strategic decision-making.

Indicative Content

Business Process Improvement (BPI)

Business Process Improvement (BPI), Key frameworks: Lean, Six Sigma, BPMM (Business Process Maturity Model), CMMI (Capability Maturity Model Integration). Tools and techniques for process Analysis such as process mapping, value stream mapping root cause analysis, SWOT and gap analysis. Identifying and prioritising improvement opportunities.

Service Development and Acquisition

Service development and acquisition, strategic considerations in service development, use of AI and emerging technologies in development & acquisition, performance and value assessment, case studies & industry investigations.

Testing and Feedback Mechanisms

Purpose and principles of testing and feedback, types of testing mechanisms, feedback collection methods, implementing AI-enhanced testing and feedback tools, data analysis and interpretation, acting on test results and feedback, quality assurance, governance & compliance.

AI in Performance and Cyber Operations Assessment

The role of AI in monitoring business performance and cybersecurity impact, how AI enhances threat detection, response, and resilience, key AI-driven metrics and analytics for assessing cyber and business operations, AI in business performance assessment such as AI-powered KPI tracking and real time analytics, machine learning for trend analysis and predictive performance insights and AI in risk assessment and decision support systems, AI in cyber operations and threat intelligence. assessing AI's impact on business and cybersecurity, strategic planning & AI driven cybersecurity management

Course Work

Assessment Type	Assessment Description	Outcome Addressed	% of Total	Assessment Date
Written Report	Students are presented with a case study that challenges them to improve a core service process by integrating AI tools. They will analyse existing process inefficiencies and investigate suitable AI solutions to support service development or acquisition.	1,2	30	Week 6
Project	Students are required to develop a comprehensive Business Process Improvement (BPI) Plan for a service-based organisation. This project will require students to apply their understanding of process analysis, service development or acquisition, testing and feedback mechanisms, performance assessment, and strategic planning — with a focus on how AI can enhance each stage	1,2,3,4	70	Sem End
No End of Module Formal Exam				

Assessment Breakdown

	%
Coursework	100

Re-Assessment Requirement

Coursework Only

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

Workload – Full Time

Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	Lectures covering the theoretical concepts underpinning the learning outcomes.	2	Every Week	2.00
Lab	Lab to support the learning outcomes.	2	Every Week	2.00
Independent & Directed Learning (Non-contact)	Independent learning by the student.	3	Every Week	3.00
		Total Hours		7.00
		Total Weekly Learner Workload		7.00
		Total Weekly Contact Hours		4.00

Workload – Part Time

Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	Lectures covering the theoretical concepts underpinning the learning outcomes.	2	Every Week	2.00
Lab	Lab to support the learning outcomes.	2	Every Week	2.00
Independent & Directed Learning (Non-contact)	Independent learning by the student.	3	Every Week	3.00
		Total Hours		7.00
		Total Weekly Learner Workload		7.00
		Total Weekly Contact Hours		4.00

Recommended Book Resources

Paul Harmon. (2019), Business Process Change, 4th Edition. Morgan Kaufmann, p.0, [ISBN: 0128158476].

Dan Duffy. (2019), Business Process Improvement (Workshop in a Workbook), Independently published, [ISBN: 978-1082048654].

Michael George,John Maxey,David Rowlands,Malcolm Upton. (2004), The Lean Six Sigma Pocket Toolbook: A Quick Reference Guide to

70 Tools for Improving Quality and Speed : A Quick Reference Guide to 70 Tools for Improving Quality and Speed, McGraw Hill

Professional, p.282, [ISBN: 0071441190].

Recommended Article/Paper Resources

Kuzembayeva N., Nurgazy Sh., Kaliyeva A., Khalizhan D. (2025), The Impact of Artificial Intelligence on Organizational Performance,

Farabi Journal of Social Sciences, 11,

https://jhumansoc-sc.kaznu.kz/index.php/ 1-eurasian/article/view/701

Wamba-Taguimdje Serge-Lopez, Fosso Wamba Samuel, Kamdjoug Jean Robert Kala, Wanko Chris Emmanuel Tchatchouang. (2020),

Influence of artificial intelligence (AI) on firm performance: the business value of AI-based transformation projects, Business Process

Management Journal, 12 May 2020, [ISSN: 1463-7154],

Other Resources

Website, Stojmanovska, Martina. (2025), How to Improve Feedback Loops and Streamline Your QA Process: Best Practices and Tips,

Online, TestDevLab,