IFN712 Research Project Proposal Form

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| Project agency (school, industry) | School of Computer Science/Information Systems |
| Industry supervisor and contact emails |  |
| Academic Supervisor name(s) and contact emails | Yanming Feng [y.feng@qut.edu.au](mailto:y.feng@qut.edu.au); |
| Information Technology major(s) | Business Analysis and ExecIT |
| Project title | Aligning ICT Education with Industry Needs: A Skills Gap and Stakeholder Analysis |
| Brief description of the research problem, aims, method and expected outputs (100~200 words) | The rapid evolution of the ICT industry is placing growing pressure on universities, students, and employers to maintain alignment between education and professional practice. A recurring challenge is the persistent misalignment between the skills acquired through university study and the competencies required in contemporary ICT roles. This skills gap contributes to underemployment, critical shortages in emerging fields, and reduced productivity in the digital economy.  This project aims to systematically identify and bridge the skills gap between ICT education and industry requirements through a stakeholder-driven, data-informed analysis. Drawing on business analysis methodologies, the project will investigate the needs of key stakeholders—including students, educators, and employers—and evaluate the alignment between expected job competencies and existing university course offerings.  Data sources will include the Skills Framework for the Information Age (SFIA), real-time job listings from SEEK, and QUT’s Master of Information Technology (MIT) curriculum. The project will map job skill requirements against course learning outcomes, assess the responsiveness of current study plans, and identify priority areas for curriculum improvement. **Expected Outcomes**  1. A detailed analysis of mismatches between ICT job market demands and the learning outcomes of QUT’s Master of Information Technology (MIT) curriculum, using SFIA and SEEK data as benchmarks. 2. A structured synthesis of insights from students, educators, and employers, highlighting priority skill areas, perceived deficiencies, and emerging competency needs in ICT. 3. A practical framework based on business analysis methodologies for mapping course content to job competencies, enabling educators to evaluate and adjust program offerings systematically. 4. Actionable recommendations for course design and study planning, focusing on high-impact skill areas such as cybersecurity, data analytics, cloud computing, and software development. |
| Key words | **ICT Skills Gaps, Curriculum Alignment,** Business **Analysis,**  **Stakeholder Engagement,** **SFIA Framework,** **Data-Driven Education** |
| Answerable research questions for 3-5 students (optional) | 1. **What are the core skills and competencies currently in demand across the ICT job market, as reflected in real-time job listings and frameworks such as SFIA?** Purpose: To establish a data-driven baseline of employer expectations and emerging skill requirements in the ICT sector. 2. **To what extent do the learning outcomes and course offerings in QUT’s Master of Information Technology (MIT) program align with the skills required in professional ICT roles?** Purpose: To assess curriculum relevance and identify potential gaps or redundancies in course content. 3. **What are the key areas of mismatch between the skills developed through ICT education and those needed for employability and career readiness, as perceived by students, educators, and employers?** Purpose: To incorporate stakeholder perspectives into the skills gap analysis and highlight areas of priority concern. 4. **How can business analysis methodologies be applied to systematically map and evaluate the alignment between course content and job market competencies?** Purpose: To develop a replicable framework that supports data-informed curriculum planning and review. 5. **What curriculum changes or study planning strategies can be recommended to better prepare ICT graduates for industry needs, particularly in high-demand areas such as cybersecurity, data analytics, and cloud computing?** Purpose: To produce actionable, evidence-based recommendations for curriculum improvement and study pathway design. |
| 3-5 key references (optional) and environment scan sources | **Skills Framework for the Information Age (SFIA).** (2021). SFIA Version 8 Reference Guide. https://sfia-online.org/en/sfia-8 **World Economic Forum.** (2020). The Future of Jobs Report. https://www.weforum.org/reports/the-future-of-jobs-report-2020.  **Healy, M., Hammer, S., & McIlveen, P. (2020).** Mapping graduate employability and career development in higher education research: a citation network analysis. Studies in Higher Education, 47(4), 799–811.  **Jackson, D.** (2016). Re-conceptualising graduate employability: The importance of pre-professional identity. Studies in Higher Education, 41(8), 1237–1258. https://doi.org/10.1080/03075079.2014.981513 |
| Required major of studies, skills, knowledge, and speciality | Completed units about business analysis and Advanced business analysis  Stakeholder Analysis & Requirements Elicitation  Analytical and communication skills |

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| **Industry-based project: Student IP Agreement.** This is the IP model agreed between the parties. Please note that it is QUT policy that where possible students should be allowed to keep their IP. If students are asked to assign their work then please **provide a brief rationale** as additional permissions are needed by QUT to approve. | Project IP vests in the student with a license back to Industry Partner **(licence)**  OR  Project IP vests in the Industry Partner with a licence back to the student **(assignment)**  OR  Academic project |
| Number of students | 4 |
| The message from supervisor(s) about the acceptance for this project | The supervising team will shortlist candidates based on their application and relevant skills in geospatial analysis, data science, and urban planning. |
| Student name(s)  (Print your name and submit this form by the end of Week 2) |  |
| Date |  |
| Remarks on conditions of offer | Candidates will be shortlisted after application review by the supervising team. |