

IC3 Certification as an Exemption Pathway: Motivating Foundation Students to Engage with Computing Skills at Sultan Qaboos University

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ABSTRACT

The challenge of engaging foundation-level students in compulsory computing courses is well documented in preparatory and bridging education literature. Low prior exposure to digital tools, limited intrinsic motivation, and the perceived irrelevance of mandatory IT requirements collectively contribute to disengagement among this student population. This paper investigates an institutional response to that challenge: a certification-based exemption pathway implemented at the Center for Preparatory Studies (CPS), Sultan Qaboos University, Oman, in which students who do not meet the threshold of a compulsory IT exit test are offered the opportunity to pursue IC3 (Internet and Computing Core Certification) as an alternative route to course exemption. This study draws on records from the CPS IC3 Office covering the period August 2023 to March 2026, encompassing 973 exam attempts by 295 registered students. Analysis of these records reveals significant variation in module-level performance and notable patterns of student persistence. Computing Fundamentals recorded the lowest pass rate at 35.8%, compared to 66.4% for Key Applications and 59.2% for Living Online. Despite the difficulty of Computing Fundamentals, voluntary retake behaviour was substantial: 87 students attempted the module twice and 34

attempted it three or more times, with no institutional requirement to do so. Over the study period, 149 students completed all three modules and earned full exemption from the compulsory IT course, representing approximately 9.9% of an expected cohort of 1,500 students. Participation in the pathway increased consistently across years, from 242 attempts in 2023 to 335 in 2025. The findings suggest that externally validated, goal-oriented certification pathways can function as effective motivational structures for foundation-level learners, stimulating self-directed engagement that would be difficult to achieve through compulsory instruction alone. This paper discusses the design and operational management of the exemption pathway, examines the implications of observed performance and persistence patterns, and proposes recommendations for institutions in the GCC region considering analogous alternative assessment frameworks.

Keywords: certification; computing education; course exemption; foundation programs; student motivation