ACS Accreditation Update December 2022

and guidance for preparing an accreditation application in 2023

See the ACS Accreditation Website
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The ICT field is in constant change. Accredited providers need to keep up with changes in their environment and be looking ahead if their graduates are to be relevant in coming years.

An aim of accreditation is to improve the professional standards of ICT graduates. The ACS welcomes accreditation applications from Non-University Higher Education Providers and offers accreditation workshops and appraisal services to support the development of programs to reach an accreditable standard. Congratulations to two new NUHEPs that were accredited in 2022 after making use of the support services (joining the 38 universities, 2 TAFEs and 1 NUHEP already accredited).

Changes in the ICT Profession

For an overview of developments in Australia see ACS Digital Pulse 2022 which 'provides a snapshot of Australia's digital economy, workforce, and policy landscape'.

The ways a provider focusses their program on specific roles of ICT Professionals, and the skills necessary to fulfil those roles, are a key accreditation criterion (criterion B). In October the ACS released the ACS Guide to the IT Professions 2022 which 'identifies top occupations, top skills and top industries, and it also provides an examination of job requirements within the sector'. Other sources of professional ICT roles include for the Skills Framework for the Information Age (SFIA) and the European Union's e-Competency Framework (e-CF).

Changes in ICT Disciplines

In-depth disciplinary knowledge is a key accreditation criterion (criterion D). Program design is expected to respond explicitly to the appropriate disciplinary bodies of knowledge (SFIA 8 identifies over 40 Bodies of Knowledge) and relevant reports of disciplinary organisations (eg. Data Science task force report).

Program and subject design should be informed by current disciplinary research and scholarship and use the literature in the discipline including pedagogical literature (eg. Teaching Ethics to Computing Science Students, SigCSE).

Changes in ACS Accreditation

ACS Accreditation continues to evolve and adapt to the changing ICT landscape. Some applicants for accreditation in 2022 used old versions of the manual and the ACS Core Body of Knowledge - applicants in 2023 must use current versions (see the ACS Accreditation Website)!

Issues Arising in 2022 Accreditations

Figure 1 summarises the results of accreditations in 2022. See the Accreditation Manual Volume 2 for a detailed specification of the accreditation criteria. The figure shows, for each accreditation criterion, the percentage of institutions and programs which
- were satisfactory on that criterion (green),
- had recommendations to be addressed within the accreditation period (orange) and
- had conditions which needed to be addressed quickly otherwise accreditation would be withdrawn (red).
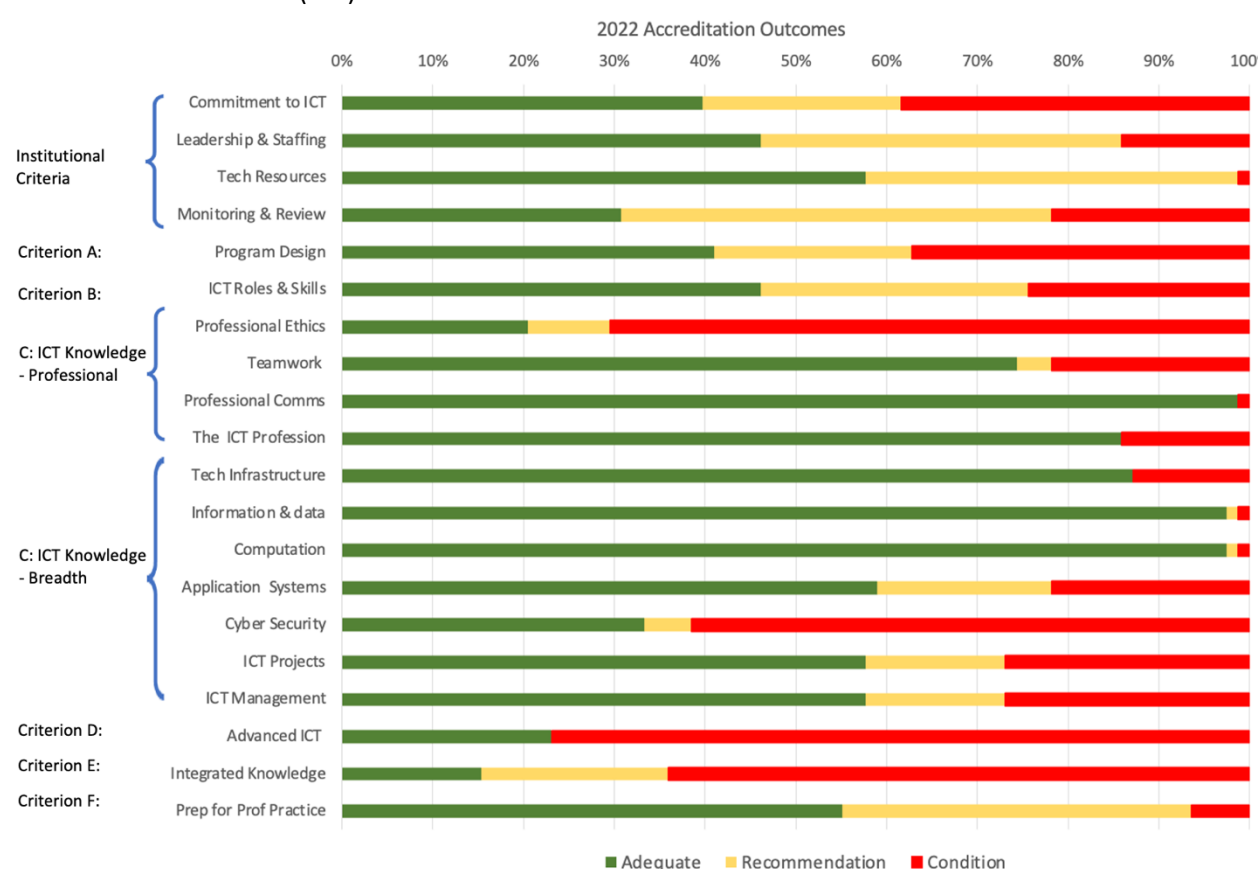

Figure 1. Summary of Accreditation Results in 2022

Most programs were satisfactory in their coverage of the technical ICT (**I**nformation & data, **C**omputation and **T**echnology infrastructure). However, more is required of an *ICT professional* than that. Figure 1 highlights 4 key problem areas: Professional ICT Ethics, Cyber Security, Advanced ICT Knowledge and Skills, and the Integration and Application of ICT Skills.

Institutions seeking accreditation in 2023 need pay particular attention to these issues to ensure their programs prepare graduates for professional practice. Seek the advice of your case manager who is there to assist.

Professional ICT Ethics

ICT professionals are increasingly relied on to manage complex aspects of public interest and corporate reputation, and graduates are expected to have a strong grasp of ethical principles and contemporary issues. Ethics is an essential professional knowledge area in the ACS Core Body of Knowledge. Best educational practice is that Ethics be introduced early and developed throughout the program as an

integrated, not a separate, part of computing knowledge and skill. Some examples include integrating ethics into stakeholder impact evaluation, QA, social aspects, UX/UI, value-sensitive design, data privacy, and integrity systems (academic integrity). Applications of technology have an ethical aspect, so the accreditation panel will expect a capstone subject to include explicit consideration and assessment of the ethics of the application.

ICT Ethics is, and has been for decades, a vibrant area of research and scholarship so providers have a wealth of teaching material to draw from. For example, some recent links are:
Teaching Ethics to Computing Science Students
https://ascnet.ie/ethics4eu-website/
Addressing Ethical Concerns During Systems Design
https://engagestandards.ieee.org/ieee-7000-2021-for-systems-design-ethical-concerns.html

Cyber Security

Cyber security has increasingly over the last decade become a critical issue for the ICT industry. In 2021 it became a mandatory accreditation requirement that cybersecurity was taught and assessed to an intermediate level of depth. In 2022 a number of institutions did not take note of this requirement and were required to address it in order to maintain their accreditation. Applicants in 2023 must use current version of the Accreditation Manuals and Core Body of Knowledge (see the ACS Accreditation Website).

Advanced ICT Knowledge and Skills

It is a core part of the concept of a professional that they have in-depth knowledge and skills in their field (see The ACS Professional Standards Platform for example). The Seoul Accord criteria for advanced ICT knowledge is part of Accreditation Criterion D. In previous years there have been conditions placed on the accreditation of some programs where they did not meet the criterion, but in 2022 there were many programs with issues. It has been suggested that institutions may have inadvertently reduced the difficulty of some advanced subjects in response to educational challenges of Covid. However, whatever the cause, institutions should ensure that the challenges of the (normally) final year advanced subjects meet the requirements.

Integrated and Applied ICT Knowledge and Skills

The situation with this criterion is very similar to that causing issues with Advanced ICT Knowledge and Skills described above. Covid may have made interaction with industry particularly difficult, hampering the accessibility of industry-based projects for example. In 2023, institutions should ensure that there is a mechanism to integrate and apply the knowledge their students have acquired during their course.

For further information

 https://www.acs.org.au/cpd-education/acs-accreditation-program.html
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