

ABET Accreditation in Canada and Russia – A Study of Contrasting Trends

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Abstract: This study examines ABET accreditation trends in Canada and Russia as of 2025. Canada currently maintains two accredited programs—an associate degree in Occupational Health and Safety (University of Fredericton) and a bachelor's degree in Architecture - Project and Facility Management (Conestoga College), both ANSAC-accredited. In contrast, Russia's three previously accredited bachelor's programs (including Software Engineering and Geological Engineering) lost accreditation between 2015-2022. Data analysis reveals Canada accounts for 100% of current ABET accreditations at these degree levels among the two nations, though this represents only select programs. The findings highlight significant disparities in sustained ABET accreditation between the countries.

Keywords: ABET; Accreditation; Canada; Engineering; Program; Russia; Technology

Introduction

The pursuit of quality engineering education aligns fundamentally with United Nations Sustainable Development Goal 4 (SDG 4), which advocates for inclusive and equitable quality education to promote lifelong learning opportunities for all [1]. As highlighted in Reference [2], accreditation and quality assurance in higher education have become essential mechanisms for producing competent engineering graduates, though current global accreditation models frequently demonstrate insufficient transparency, scientific rigor, and comprehensive evaluation of the complete educational cycle (input-process-output). While regional accreditation systems exist, their inconsistencies and frequent omission of laboratory components - a critical element of engineering education - underscore the pressing need for a standardized, scientifically-validated assessment framework. This research proposes developing a comprehensive accreditation model to address these gaps through a structured three-stage methodology, with the ultimate goal of establishing reliable quality benchmarks that align engineering education with both professional competencies and broader societal needs.

The emergence of transnational commercial higher education in Russia, explored in Reference [3], reveals both opportunities and challenges following economic liberalization. While introducing valuable new institutional models, the phenomenon also exposes systemic issues including uneven regional access, quality inconsistencies, and a lack of specific legal frameworks for cross-border programs. These developments are further contextualized within Russia's broader higher education reforms, including Bologna Process alignment, growth of private and fee-based education, and persistent challenges like underfunding, faculty shortages, and social inequalities in access - all of which collectively shape the regulatory landscape for transnational education.

Reference [4] demonstrates an innovative approach to meeting TAC-ABET accreditation requirements for assessing "soft skills" such as internationalization and ethics. The study successfully integrated global issues into a technical EET curriculum through a case study examining climate change and the Kyoto Protocol within an electric power course. While humanities courses traditionally expose students to these topics, direct assessment remains challenging; this approach enabled measurable evaluation through pre- and post-discussion surveys coupled with homework assignments, yielding actionable data for ABET review. Although student engagement proved positive, the case study requires periodic updates to maintain relevance in evolving educational and policy contexts.

ABET's global vision, as discussed in Reference [5], focuses on advancing engineering education worldwide through strategic initiatives like the Washington Accord (promoting international recognition of accredited programs) and the Western Hemisphere Initiative (fostering collaboration across North, Central, and South American nations to enhance education quality). A significant milestone occurred in 2006 when ABET transitioned from evaluating foreign programs for "substantial equivalency" to offering full international accreditation, thereby ensuring global alignment with rigorous educational standards while respecting cultural differences. ABET continues to demonstrate commitment to global leadership in engineering education by supporting continuous quality improvement and accreditation systems worldwide.

Reference [6] provides a detailed examination of Russia's evolving approach to engineering education accreditation through the Association for Engineering Education of Russia (AEER). The AEER has developed comprehensive accreditation criteria aligned with international standards like EUR-ACE and the Washington Accord, ensuring graduates meet industry needs through outcome-based learning and lifelong professional development. While AEER's system strongly emphasizes continuous improvement via rigorous program evaluation and engineer certification requirements, substantial challenges persist in scaling these practices nationally due to inconsistent federal regulations and the ongoing need to fully integrate lifelong learning principles across Russia's engineering community.

The Washington Accord's framework, analyzed in Reference [7], establishes mutual recognition of accredited engineering programs among signatory bodies. However, despite 25 years of implementation, most U.S. state licensing boards still fail to formally acknowledge it in their statutes. This paper reveals substantial alignment between ABET and Engineering Council (EC) accreditation criteria while identifying key differences, arguing persuasively that these similarities should motivate U.S. licensing boards to recognize EC-accredited programs - though clearer definitions of "substantial equivalency" between different accreditation systems remain urgently needed.

Canada's integrated licensure and accreditation system, examined in Reference [8], demonstrates how mandatory professional certification coupled with explicit accreditation requirements for social/ethical competencies can foster curricular innovation. Concordia University's successful implementation of courses addressing global engineering, professional ethics, and real-time technology assessment serves as a compelling case study. While this regulatory framework has enabled meaningful reforms, the author cautions against emulating recent U.S. trends (through ABET) of weakening non-technical requirements,

while simultaneously inviting American educators to consider the benefits of coupling licensure with accreditation to better prepare future engineers for complex societal challenges.

Reference [9] provides a historical analysis of ABET's evolving governance role in U.S. engineering education, particularly through landmark reforms like EC2000. The study reveals how decentralized governance, professional society tensions, and industry demands have collectively shaped outcomes-based assessment practices, creating ongoing tensions between standardization and institutional flexibility. The research highlights ABET's transition from quantitative standards to professional skill assessment through stakeholder negotiations and crisis-driven change, while current practices show varied institutional responses - ranging from meaningful engagement to minimal compliance - raising critical questions about accreditation's capacity to drive continuous improvement in America's diverse higher education landscape.

As emphasized in Reference [10], accreditation serves as a vital quality measurement tool for higher education institutions, with ABET emerging as the preeminent global accreditor for STEM programs - including two-year associate degrees. While the ABET accreditation process for associate degrees shares many similarities with bachelor's programs (despite differing specific criteria), preparation remains resource-intensive. Nevertheless, the significant benefits for both students and institutions fully justify the required effort, though additional research is warranted to fully understand its long-term impacts.

Reference [11] presents a comparative analysis of Architectural Engineering programs accredited by CEAB and ABET across Canada, the U.S., and internationally. The study highlights significant variations in specializations, experiential learning components (contrasting co-ops versus design studios), and program durations that reflect distinct institutional priorities and regional needs. The findings reveal fundamentally different educational approaches - with Canadian programs emphasizing co-ops and building science, while U.S. programs focus more intensively on architectural theory and studio work - raising important questions about employer expectations and underscoring the need for further research to better align curricula with evolving industry demands in construction and design sectors.

Reference [12] established an important baseline with its comprehensive survey of ABET-accredited programs across all degree levels (associate to master's) in Saudi academic institutions as of 2015. The research identified Saudi Arabia's unique position in maintaining ABET accreditation for several engineering disciplines - including aerospace, biomedical, mining, nuclear, and polymer engineering - which remained unaccredited in other GCC nations at that time. Notably, King Fahd University of Petroleum & Minerals (KFUPM) emerged as Saudi Arabia's sole institution with ABET accreditation spanning all degree levels.

Building on this foundation, Reference [13] analyzed Saudi Arabia's ABET-accredited programs through 2021, documenting a remarkable threefold increase in accredited bachelor's programs since the 2015 baseline established in [12]. While existing studies have examined accreditation patterns in Saudi Arabia [14-18], GCC countries [19], and non-GCC Muslim-majority nations [20], the literature still lacks a

comprehensive, holistic comparative analysis of ABET accreditation across multiple national contexts - a gap this research aims to address.

Comparative Analysis

Table 1 [21] provides an overview of ABET-accredited programs in Canada and Russia as of 2025. The data reveal that Canada is currently the only country between the two with active ABET-accredited programs, consisting of one associate degree and one bachelor's degree program. The associate degree program, titled Occupational Health and Safety, is offered by the University of Fredericton and has held ABET accreditation since October 1, 2022. Meanwhile, the bachelor's degree program, Architecture - Project and Facility Management, is delivered by Conestoga College Institute of Technology and Advanced Learning and has been accredited since October 1, 2021. Both programs fall under the ANSAC (Applied and Natural Science Accreditation Commission) criteria. Notably, neither Canada nor Russia currently offers ABET-accredited master's degree programs. Russia's inclusion in the table is based on its past involvement with ABET accreditation, as it previously hosted some accredited bachelor's degree programs that have since lapsed.

Table 1. Number of active ABET-accredited programs in Canada and Russia (2025)

Countries	Associate	Bachelor's	Master's
Canada	1	1	0
Russia	0	0	0
Total	1	1	0

Table 2 [21] compares historically ABET-accredited programs in Canada and Russia as of 2025. The data confirm that Canada's two currently accredited programs—the associate and bachelor's degrees—remain active. In contrast, Russia once had three ABET-accredited bachelor's degree programs, all of which have since lost accreditation. These included (1) Software Engineering at the National Research University Higher School of Economics (EAC-accredited until September 30, 2022), and (2) Geological Engineering with specialization in Petroleum Geology and (3) Electrical Power and Electrical Engineering, both at Tomsk Polytechnic University (EAC-accredited until September 30, 2015). The discontinuation of these programs highlights a divergence in how the two countries engage with international accreditation bodies over time.

Table 2. Number of historically ABET-accredited programs in Canada and Russia (2025)

Countries	Associate	Bachelor's	Master's
Canada	0	0	0
Russia	0	3	0
Total	0	3	0

Figure 1 illustrates the percentage distribution of currently ABET-accredited programs in Canada and Russia for 2025. The data clearly show that Canada accounts for 100% of active accreditations at both the associate and bachelor's degree levels, as it is the only country between the two with currently recognized programs. However, this figure should not be misinterpreted—while Canada dominates the current ABET landscape between these two nations, the 100% representation does not imply that all eligible Canadian programs are ABET-accredited. Rather, it reflects that, among the two countries analyzed, only Canada has maintained active ABET accreditation at these degree levels as of 2025.

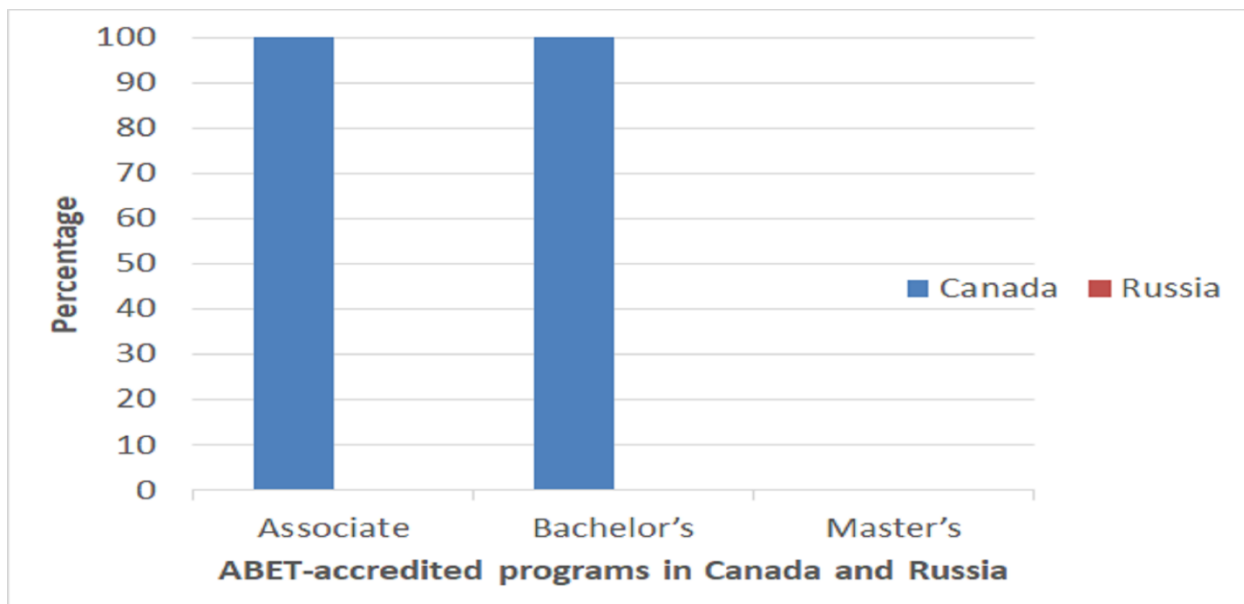


Figure 1. Percentage of ABET-accredited programs in Canada and Russia (2025)

Figure 2 depicts the percentage distribution of historically ABET-accredited programs in Canada and Russia as of 2025. The data indicate that Russia previously had three accredited bachelor's degree programs, all of which have since lost their ABET recognition. In contrast, Canada's two currently accredited programs remain active, meaning no Canadian programs have lapsed. This trend suggests differing institutional commitments to sustaining ABET accreditation, with Canada maintaining its engagement while Russia's historical participation has diminished. The contrast raises questions about the long-term viability and perceived value of ABET accreditation in different national higher education systems.

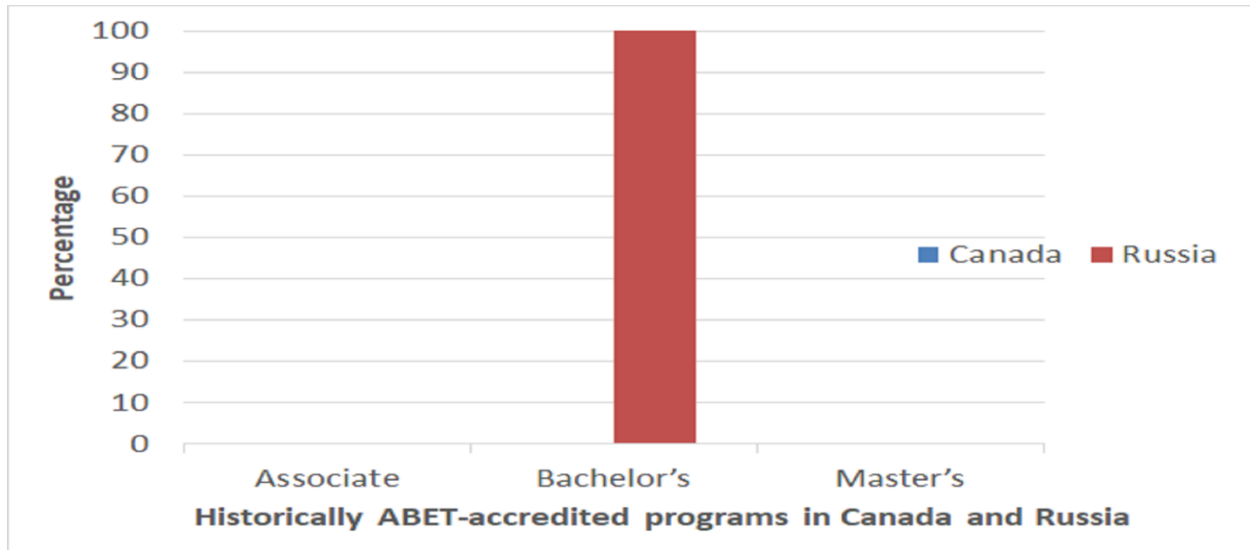


Figure 2. Percentage of historically ABET-accredited programs in Canada and Russia (2025)

Conclusions

The analysis reveals Canada as the sole surveyed nation maintaining ABET accreditation, with just two active programs at the associate and bachelor's degree levels, while Russia has all (3) historically accredited programs—indicating systemic challenges in upholding international engineering education standards. Although Canada's 100% accreditation rate among these nations appears dominant, this reflects minimal institutional participation rather than widespread adoption across the country. Notably, neither of Canada's accredited programs holds an international mutual recognition agreement, and only two higher education institutions have pursued ABET accreditation, highlighting selective engagement. These disparities emphasize how institutional commitment and regulatory frameworks shape sustained accreditation outcomes. Future research should examine the specific factors behind Canada's retention and Russia's attrition of ABET accreditation to develop strategies for enhancing global engineering education standards.

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