

# **BUILD-IT Playbook Series**

# Resources for a sustainable world class model in STEM Higher Education

Since 2015 the BUILD-IT Alliance, through strategic collaborative dialogue with industry and the Vietnamese Government (MOET), has focused on creating a world class model for innovative technology and engineering higher education. The BUILD-IT public-private ecosystem is designed to produce graduates who can solve problems and engineer solutions and value for Vietnam's social and economic development. BUILD-IT leverages the vast capabilities of the implementing partner, Arizona State University, America's largest and #1-ranked university for innovation, along with diverse government, industry, and academic partners linking T&E higher education to the needs and capabilities of industry partners, building strategic leadership skills to advance university autonomy, program and instructional quality, and formal lasting

partnerships. BUILD-IT supports female empowerment and has provided leadership forums, academic initiatives, and scholarships, and has laid groundwork strengthening the universities' capacity for building technical English and 21st century professional skills.

The BUILD-IT Playbook series has been developed with collaboration and input from BUILD-IT partners and is designed to provide a quick start guide and compilation of best practices that have been effectively implemented in Vietnam by our partner institutions. By leveraging these lessons learned and resources for implementation of tested and effective models, you will have resources that will help you develop a sustainable world class model in STEM Higher Education.

### Playbooks in our series include:



### Makerspace

Multifunctional spaces with workshops and tools to prototype innovations, Makerspaces provide critical learning spaces to the generation of problem solvers.



### **AUN-IQA:**

This playbook presents recommended processes, best practices and key points of emphasis to facilitate the successful completion of AUN-IQA certification.



### **EPICS**

Helping students build both the hard and soft skills needed to be successful, EPICS is an internationally recognized engineering-based service learning and social innovation applied project program.



### Digital Pedagogy in Higher Eduction

Through the digital pedagogy playbook, BUILD-IT university partners have access to proven best practices, methodologies, and approached for teaching and learning in a digital environment.



### Women in Project-Based Learning:

This playbook presents detailed instructions for creating genderresponsive programs that encourage and support women in engineering.



#### Accreditation

This playbook serves as a quick start guide for leaders and officials of universities who are considering or have begun a journey to external international accreditation for programs.



### **CFT-MTT:**

This playbook provides step-by-step strategies for creating a high yield of trained faculty in a short duration of time who can better drive students towards university success.



#### Industry Advisory Board

This quick start guide provides a foundation for setting up your IAB. Learn the basics of forming your board, finding participants, and setting expectations.

## **Summary**

This playbook serves as a quick start guide for leaders and officials of universities who are considering or have begun a journey to external international accreditation for programs. It reflects BUILD-IT and its Vietnamese partners' knowledge and experience gained over the past seven years of preparing for successful AUN-QA certification and ABET accreditation. This guide contains a brief introduction to international program accreditation, its value and benefits, and the structured approach proven to be successful for Vietnamese colleges and university programs seeking international accreditation. Contributions from Vietnamese partners' experiences are included to help validate both the process and value of attaining accreditation.









# Why Seek International Accreditation?

There are many reasons why your program may seek international accreditation. Accreditation provides formal recognition of your program meeting standards of quality by peers within your institution, throughout Vietnam, and the world. Accreditation has significant influence on attracting outstanding faculty and students and can be a significant factor in improving student learning and retention. Accreditation encourages planning for quality and identifies important changes that support resource decisions. Accreditation provides the confidence that your program meets quality standards to produce graduates prepared to contribute to the global workforce, improving Vietnamese society and the region's economy.

International recognition, like ABET accreditation or AUN-QA evaluation, helps students select quality programs because the process shows the institution is committed to:

- · improving the educational experience of students,
- helping students prepare to enter "the profession"
- enhancing employment opportunities
- establishing eligibility for financial aid and scholarships
- augmenting the relationship with international institutions and companies

Accreditation assures students and prospective employers that an educational degree program has met quality standards. For instance, ABET accreditation helps ensure, via assessment and continuous improvement processes, that graduates have received a quality education and are capable of performing a broad range of professional responsibilities.



International recognition, like ABET accreditation or AUN-QA evaluation, has value for the institutions by:

- providing neutral "third-party" confirmation of quality of programs
- creating/affirming prestige, recognition by the "profession" via ABET's professional societies
- helping attract the strongest students
- enabling more assurance of quality of student's education when students seek graduate education in Vietnam or other countries
- helping obtain external funding due to quality assurances

International recognition, like ABET accreditation or AUN-QA evaluation, has value for society by:

- helping ensure quality of academic programs and public confidence
  - » supporting professional practice or industry certification
  - » assuring that graduates are ready to enter the profession
- engaging multiple constituents from both education and business/industry
- identifying programs suitable for investment either public or private funds
- some assurance to public and ministries of education that Funding for higher education are appropriately spent

"Accreditation is not for the certificate only, but for the real benefits to the stakeholders along the way."

> Ms. Nguyen Thi Thanh Binh Deputy Head of International Cooperation Department, Cao Thang Technical College



This section explores accreditation by describing **1)** *value and benefits*, **2)** *general principles* and **3)** *a structured approach to preparing and achieving a successful international accreditation/evaluation.* 

# **Quick Reference Guide to Accreditation**

This playbook addresses two common avenues for international recognition for programs in Vietnam: AUN-QA and ABET. The two organizations and their evaluation system both have commonalities but also significant differences. AUN-QA evaluates all types of programs but only at universities. ABET accredits only specific types of programs (in disciplines of applied and natural science, computing, engineering and engineering technology) but at both colleges and university programs. Both organizations evaluate specific programs—not faculties or colleges that offer multiple degrees (note that AUN assesses member institutions)—and each program stands by itself when evaluated.

Generally Accepted International Accreditation Principles (used by ABET):

- done by a non-governmental organization
- fair and impartial peer-review process
- requires self-assessment by the program/school
- continuous process (reviewed every n years)
- scores are not used—minimum level of compliance is required but not scored
- failure of single criterion results in loss of accreditation
- deficiencies in one area cannot be compensated by strengths in other areas.

Note that AUN-QA operates differently with respect to the last three bullets – it uses a scoring system and requires a specific score to achieve a successful evaluation (leading to issuance of a certificate). ABET evaluation leads to a binary result: accredited (1) or not accredited (0) and no rankings or scores are issued.







### **AUN-QA/ABET**

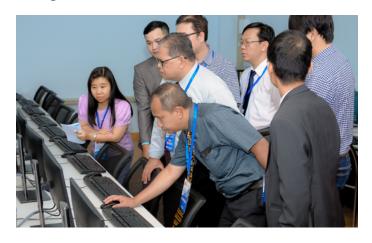
AUN is a network of universities in ASEAN countries established to promote higher education cooperation in the ASEAN community. Each university must become a member or an associate member, initially at the associate level, of the AUN system in order to pursue program accreditation and, at this point, only universities are offered membership. A branch of AUN, the AUN-Quality Assurance or AUN-QA, has established criteria and processes for evaluation against those criteria (it is not an accreditation). Evaluators are nominated, either by self-nomination or by institution, with no requirement to represent a specific discipline. Also, to date, no two-or three-year programs have been evaluated by AUN-QA. There is no internal sub-division of programmatic responsibility and there is only one set of accreditation criteria. All programs are evaluated against a common set of 8 criteria (version 4.0 published in August 2020), with many different sub-criteria, and programs from any discipline are evaluated. The results of an evaluation fall upon a scale between one and seven. Overall scores above a four allow recognition as a program meeting the quality standards. AUN-QA only accredits programs from member universities within the tencountry ASEAN community.

"Quality Assurance is not a destination, but it is a journey to further continuous improvement"



**Dr. Nguyen Huy Phuc**Head of Office of Testing & Quality
Assurance, Industrial University
of HCM

ABET has four accreditation commissions and each commission has different general criteria, eight in total, that all programs must meet. However, within these different criteria, five of the criteria are the same for all commissions. The criteria document is short with these general criteria usually shown in six or fewer pages plus up to two pages of definitions. There are also program criteria (specific requirements for specific programs) that are based on the program name/type and these are usually less than a page in length.



ABET's organizational structure and volunteer cadre are different from AUN-QA as well. An ABET program evaluator is an expert in the program's discipline or academic area—either seasoned academics or people working in industry. Evaluators are selected not by ABET but by ABET member professional societies, receive updated training every year and undergo a "360" evaluation every time they conduct a program evaluation. aABET volunteers come from both industry and academics and do not receive any payment other than expenses when doing an evaluation. No honorariums are allowed. They are strictly neutral, volunteers "giving back" to their discipline with strenuous conflict of interest rules implemented by ABET. Professional societies have input at several points in writing evaluation criteria so the criteria reflect the needs of the disciplines—criteria are not just written by academics. Each professional society writes their program criteria—mechanical engineering society writes mechanical engineering program criteria—to list specific requirements that the program must meet.

# Structured Journey to Achieving International Accreditation

# **#1 Leadership Commitment and Adoption of Roles**

A successful accreditation effort requires leadership commitment—not just words but actions as well—and a team effort. Many activities must occur and it will take a team to accomplish them.

Leadership commitment must be visible and active to show accreditation is a leadership-driven institutional priority. As a part of that commitment, roles need to be assigned and accountability established. While strategic direction is established by the Rector or University Council, everyone has a role to play in a successful effort. Staff and lecturers play important roles as they often accomplish the detailed work. Curriculum modification or laboratory development can be identified and all levels of the institution will be involved.

# **#2 Commitment of Resources to Achieve Goal**

There must be a commitment of resources to achieve AUN-QA or ABET goals. A successful effort will require lecturer/program administration time; quality assurance staff time; laboratory and course developments as identified through the preparation processes. There must be an ongoing commitment to maintaining the continuous improvement processes for targeted programs. A successful ABET accreditation effort will take multiple years to unfold, and leadership must both ensure task accountability and provide the support necessary to accomplish those tasks.







# #3 Benchmark program structure and contents.

AUN-QA criteria are not as prescriptive as ABET criteria with regard to program structure and contents. ABET guides your program structure and contents via its criteria. So the program should measure and determine its suitability for ABET accreditation as early as possible. If changes are needed to be in compliance with ABET criteria, those should be implemented as soon as possible. Use the following to evaluate your program's contents and structure to determine if it is suitable.

- Criterion 3. Student Outcomes
- Criterion 5. Curriculum
- Criterion 7. Facilities and
- Program Criteria (by type of program as required)

### #4 Focus on quality and improvement of student learning

AUN-QA criteria version 4.0 has adopted a more specific approach to program level expected learning outcomes and related measurement of student learning and using those measurements to guide improvements. But, even so, AUN-QA is not as prescriptive as ABET criteria with regard to program level student outcomes and measurement/evaluation of the attainment of those student outcomes. But for either organization, it is important to use measurement of student learning to guide program improvement actions. While doing this can be a lot of effort, there are key ways to make it more efficient and effective. Huge amounts of data are NOT necessary; in fact, fewer data that enable meaningful action is often more effective (and less effort).

Key ABET criteria for guiding program quality improvement processes are:

- Criterion 3. Student Outcomes
- Criterion 4. Continuous Improvement



### **#5 Begin Writing the Self-Assessment Report (SAR)**

Start early – there are many sections you can write early since they do not change often. Early identification and correction of issues can be used as opportunities for continuous improvement. While the temptation is often to write the SAR in Vietnamese first and then translate it to English (which both AUN-QA and ABET require), that approach is not very efficient. We recommend writing the first draft in English and continue to improve both the content and the writing as the evaluation preparations progress.

SAR writing management tips:

- The Dean's office (or other appropriate administration level) should lead preparations and appoint program liaison for each program. But each program should also have a team assigned to the task of leading program preparations—including the SAR's writing.
- The writing process should involve centralized and decentralized components—some parts of the SAR may be more than 90% the same for all programs being evaluated. So, have those written once by a central office and then customized by the program. Other sections will be unique to the program so program personnel should write those sections. But the overall process needs the support and collaboration of both faculty and administration.

- The program liaison and major contributors to the SAR should be given credit for SAR workload during its development.
- The timeline for SAR preparation should be created and tasks assigned to appropriate individuals.
   Appoint specific people to be responsible for specific parts of SAR preparation.
- When preparing SARs, unless there is only one program, do not make each program write the entire SAR—see the second bullet above!

Throughout the process, think about the report from the assessor's point of view. Your evaluator is the primary audience for the SAR! ABET provides a SAR questionnaire—which includes questions to answer and guidance on how to answer those questions. It is very helpful if the program only answers the template's questions and does not add extraneous material. Yes, you are proud of the program's activities or capabilities, but the SAR is a focused document, so include only necessary content. When writing the SAR:

- Turn on the spell and grammar checkers.
- Use tables and graphics to supplement the text.
- Pay attention to formatting and ease of navigation.

### **#6 Stakeholder Involvement**

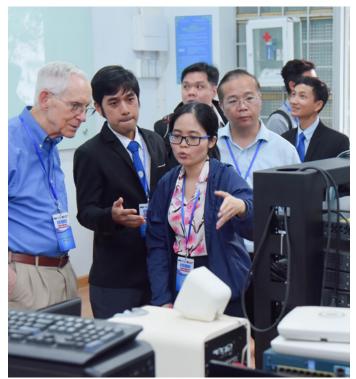
Both AUN-QA and ABET require stakeholder involvement in the program. A very important stakeholder group are representatives of the businesses and industries that hire program graduates. Creating an industry advisory board and involving that group in ABET accreditation or AUN-QA evaluation should be a part of the program's preparations for those reviews. It is always better to involve this group early in the process so they understand the evaluation process and can learn more about the program as preparations continue.

AUN-QA has multiple sub-criteria that specify stakeholder involvement. Key ABET criteria related to stakeholder input are:

- Criterion 2. Program Educational Objectives
- Criterion 5. Curriculum (engineering technology program only)







### References

Comparing ABET and AUN-QA with respect to quality systems: download paper at: <u>Comparison of AUN-QA and ABET Accreditation.pdf</u> or find it at <a href="http://aun-qa.org/views/front/pdf/NewsArticles/Art

Becoming an ABET program evaluator: <a href="https://www.abet.org/program-evaluators/become-a-program-evaluator/">https://www.abet.org/program-evaluators/become-a-program-evaluator/</a>

AUN-QA information <a href="https://www.aunsec.org/discover-aun/thematic-networks/aun-q">https://www.aunsec.org/discover-aun/thematic-networks/aun-q</a>

AUN-QA evaluation criteria 4.0 Guide to AUN-QA assessment at programme level Version 4.0

ABET Criteria (by individual commission): https://www.abet.org/accreditation/accreditation-criteria/

Multiple Vietnamese programs from BUILD-IT partners have been successful when seeking AUN-QA evaluation and ABET accreditation (both colleges and universities). As mentioned at the start of the document, leaders from these programs have helped BUILD-IT develop this quick reference guide. But they also have specific advice about how to improve programs even as they work towards international recognition.

### Ms. Ngo Thi Thanh Binh

Deputy Head of International Cooperation Department Cao Thang Technical College (CTTC), HCMC

**Ms. Binh believes the critical success factors** for their ABET accreditation efforts were:

- Demonstrated leadership commitment at all levels
  - » Consistent emphasis on the importance of the activity
  - » Leadership was involved, setting a good example
  - » Worked to motivate (not via pressure) everyone involved in the effort, providing inspiration to create consensus among leaders and faculty members
- Building cohesion between faculty members
  - » Creating a desire to learn and the exchange of ideas
  - » Sharing of the difficulties but also the benefits of the work
- Leveraging support from partners to:
  - » Develop knowledge and skills of faculty members via workshops implemented by ASU and USAID via HEEAP, VULII
  - » Engaging industry partners in revising PEOs, SOs, and curriculum
  - » Upgrade facilities and equipment



### **CTTC's Best Practices and Suggestions:**

- Review work done on a regular basis to avoid doing too much that isn't correct and having to restart the procedure.
- Every program needs a "conductor" or facilitator (not necessarily a dean or vice dean), but someone who knows the program well and is well-known and respected within the program
- Provide program leaders autonomy and support, e.g., a secretary
- Critical step is forming a team of program lecturers, helping them create a well-developed accreditation work plan (goals and steps to achieve them)
- Keep good evidence, not just data, of assessment of student attainment of student outcomes, which is a lot of work
- There must be a habit of keeping evidence meeting minutes, examples of student work, etc.
- Simplify the process whenever possible and digitalize evidence
- Data quality matters more than quantity; meaningful and high-quality data is most important
- Program quality improvement system must emphasize how the program continuously works to improve its quality
- Listen to and engage stakeholders, letting them see the impact of their feedback
- While writing the self-study report, stick to the self-assessment report template's questions, avoid rambling and cumbersome paragraphs, to only provide exactly what the evaluator needs

#### Dr. Phan Tran Vu

Dean, Faculty of Computer Science and Engineering Ho Chi Minh City University of Technology

**Dr.Vu believes the critical success factors** for their ABET accreditation efforts were:

- Strong commitment from the President, Dean and various university management levels
- Willingness of faculty members to participate in the accreditation process.
- Consultation from BUILD-IT or other experts is critical for initial accreditation.

### **HCMUT's Best Practices and Suggestions**

- International accreditation should be considered as a strategic goal for improving the quality of university education, especially in the current context of Vietnam.
- During the preparation for accreditation, try to make things simple and not complicate the accreditation process.
- Study programs and their supporting materials should be well documented.
- Clear communication about the accreditation effort and its value to all faculty members is very important.
- Contact accreditation experts around the country and world-wide. They are always willing to help.
- When applying for accreditation, program structure, management and curriculum may need to be changed to comply with accreditation requirements.
- Realize that some faculty members may not be happy with the accreditation and work to minimize their negative influences.
- Accreditation helps us to have better insights into quality assurance in education.

## "Accreditation after all helps us to have better insights into quality assurance in education"



**Dr. Phan Tran Vu**Dean, Faculty of Computer Science and Engineering, Ho Chi Minh City University of Technology, First University in Vietnam to have ABET accredited programs





### Dr. Vo Van Toi

Vice-Provost for life and Health Science, Engineering and Technology Development

International University–Vietnam National University, Ho Chi Minh City

Former Chair of the Department of Biomedical Engineering before it became the School of Biomedical Engineering

**Dr. Toi believes their critical success factors** for ABET accreditation were:

- Understanding all ABET requirements and building the "know-how" to satisfy them
- Attending every ABET-connected training conducted by BUILD-IT
- Read carefully and follow ABET critical documents (Accreditation Policy and Procedures Manual or APPM, SSR questionnaire template, posted accreditation changes, etc.)
- Maintain a committed team throughout the process
- Starting early to develop a sustainable continuous improvement system
- Student outcomes were established when the program was established in 2009
- Don't wait until you have designed a perfect process. Implement early and revise along the way

   it demonstrates continuous improvement
- Seeking help from experts
- BUILD-IT staff and workshops
- Mock visit exercise was very helpful

### **Lessons Learned and Suggestions**

- Participation of the whole department with institutional support is required.
- A dedicated team throughout the process is needed. Include members who know the program really well and know about changes to the program
- Training/capacity building activities are critical to gain necessary 'know-how"
- Developing clear, simple procedures is important.
   Continually reminding faculty and staff about the goal and progress made is essential.
- Reviews by experts are critical. Some issues (e.g., laboratory safety) are required but not well defined so need experts' opinion
- Importance of industry input across many dimensions
  - » Seek industry input on program educational objectives, curriculum and student outcomes to reflect industry's needs
  - » Industry participation in organizing seminars and conferences
  - » Providing students' real-world experiences through internship, field trip, job opportunities
  - » Collaborating with the programs in research and development
  - » Establishing the link between the programs and other partners to bring academic-developed products into the market
  - » Helping the program to enhance and modernize the facilities

"The far-reaching vision of leadership, and dedication and professionalism of faculty and staff constitute the quality of the program, hence contribute to the success of the accreditation process"

Dr. Vo Van Toi Dean, Faculty of Computer Science Vice-Provost for Life and Health Science, Engineering and Technology Development, International University Vietnam National Universities - Ho Chi Minh City



### Dr. Nguyen Huy Phuc

Head of Office of Testing & Quality Assurance Industrial University of HCM

**Dr. Phuc believes their critical success factors** for ABET accreditation and AUN-QA assessment were:

- Building a quality culture so all staff members realize that quality assurance activities are not just specific person's work but everyone at the university.
- Preparing specialists in quality assurance (QA) by sending staff to participate in QA training workshops both national and internationally.
- · Developing funding for QA activities.
- Expanding QA network to all faculty groups, from top leadership to departments and faculty groups.
   Having each program have its own QA specialist helped a lot.
- The University QA Office plays an important role in helping programs prepare for accreditation/ assessment. They were ready and motivated to support the programs.
- Being positive and ready for change, including accepting suggestions/recommendations from experts.
- Fully implementing the P-D-C-A cycle in all activities and feedback-based improvement, such as a culture of quality.



### **Lessons Learned and Suggestions**

- Quality assurance was a strategic university goal closely managed by the Board of Rectors;
- A culture of quality assurance was established at IUH with a simple quality assurance model at all levels of the university. Each department or division has at least one quality assurance staff member helping implement QA activities.
- Create a high level of commitment and unity among team members during ABET accreditation and AUN-QA assessment preparation—this process takes time and effort.
- Develop a cohesive roadmap with reasonable timelines for academic programs' quality improvement process development and implementation.
- Organize regular field visits to other school partners to learn from their experience and best practices related to ABET or AUN-QA evaluations.

### Let us know...

Thank you for your interest in the BUILD-IT playbooks, we hope these useful guidelines will help you develop a sustainable world class model in STEM Higher Education. Make sure to share your input on implementing our playbooks and how you used them.

Reach out to **builditvietnam@asu.edu** to let us know about your successes and any lessons or suggestions you would like to send as feedback.