# ABET Accreditation

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Working together …

Accreditation Board for Engineering and Technology [ABET]

- Originally founded in 1932 as the Engineers' Council for Professional Development (ECPD).

- In 1980, the title has been changed to the Accreditation Board for Engineering and Technology to more accurately describe the emphasis on accreditation.

Step-by-Step

Readiness Review → Request for Evaluation → Self-Study Report → On-Site Visit
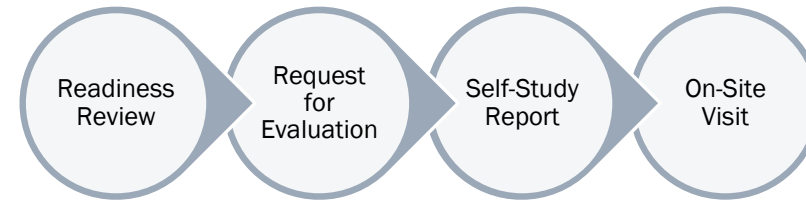
1. Complete the Readiness Review by October 1 (One Year before on-site visit).

2. Submit your Request for Evaluation by January 31.

3. Complete and submit your Self-Study Report by July 1.

4. The On-Site Visit takes place September – December.

5. Due Process and the Accreditation Decision (AUGUST 31)

Our Goal

Task	Date
Complete the Readiness Review by October 1 (One Year before on-site visit).	October 1, 2021
Submit your Request for Evaluation by January 31.	January 31, 2022
Complete and submit your Self-Study Report by July 1.	July 1, 2022
The On-Site Visit takes place September – December.	Sep – Dec, 2022
Due Process and the Accreditation Decision (AUGUST 31)	August 31, 2023

Self-Study Report

A. Background Information

B. Criteria
   1. Criterion 1: Student
   2. Criterion 2: Program Educational Objectives
   3. Criterion 3: Student Outcomes
   4. Criterion 4: Continuous Improvement
   5. Criterion 5: Curriculum
   6. Criterion 6: Faculty
   7. Criterion 7: Facilities
   8. Criterion 8: Institutional Support

C. Program Criteria

D. Appendices

Background Information

A. **Contact Information**: List name, mailing address, telephone number, and e-mail address for the primary pre-visit contact person for the program.

B. **Program History**: Include the year the program was implemented and if this is not an initial review, the date of the last general accreditation review. Summarize major program changes with an emphasis on changes occurring since the last general review.

C. **Options**: List and describe any options, tracks, concentrations, etc. included in the program.

D. **Program Delivery Modes**: Describe the delivery modes used by this program, e.g., days, evenings, weekends, cooperative education, traditional lecture/laboratory, off-campus, distance education, web-based, etc

E. **Program Locations**: Include all locations where the program or a portion of the program is regularly offered (this would also include dual degrees, international partnerships, etc.).

F. **Public Disclosure**: Provide information concerning all the places where the Program Educational Objectives (PEOs), Student Outcomes (SOs), annual student enrolment and graduation data is posted or made accessible to the public. If this information is posted to the Web, please provide the URLs.

G. **Deficiencies, Weaknesses or concerns from previous Evaluation and the actions taken to address them**: Summarize the deficiencies, weaknesses, or concerns remaining from the most recent ABET Final Statement. Describe the actions taken to address them, including effective dates of actions, if applicable. If this is an initial accreditation, it should be so indicated

Criterion 1: Student

A.   **Student Admission:** Summarize the requirements and process for accepting new students into the program.

B.   **Evaluating Student Performance:** Summarize the process by which student performance is evaluated and student progress is monitored. Include information on how the program ensures and documents that students are meeting prerequisites and how it handles the situation when a prerequisite has not been met.

C.   **Transfer Students and Transfer Courses:** Summarize the requirements and process for accepting transfer students and transfer credit. Include any state-mandated articulation requirements that impact the program.

D.   **Advising and Career Guidance:** Summarize the process for advising and providing career guidance to students. Include information on how often students are advised, who provides the advising (program faculty, departmental, college or university advisor).

E.   **Work in Lieu of Courses:** Summarize the requirements and process for awarding credit for work in lieu of courses. This could include such things as life experience, Advanced Placement, dual enrolment, test out, military experience, etc.

F.   **Graduation Requirements:** State the name of the degree awarded (Bachelor of Science in Computer Science, Bachelor of Science in Information Systems, etc.) Summarize the graduation requirements for the program and the process for ensuring and documenting that each graduate completes all graduation requirements for the program. If applicable, describe the process for how course deviations are handled to ensure that graduation requirements are met.

G.   **Records of Student Work/Transcripts**

Criterion 2: Program Educational Objectives

A. **Mission Statement:** Provide the institutional mission statement.

B. **Program Educational Objectives:** List the program educational objectives and state where these can be found by the general public.

C. **Consistency of the Program Educational Objectives with the Mission of the Institution:** Describe how the program educational objectives are consistent with the mission of the institution.

D. **Program Constituencies: List the program constituencies:** Describe how the program educational objectives meet the needs of these constituencies

E. **Process for Review of the Program Educational Objectives:** Describe the process that periodically reviews the program educational objectives including how the program's various constituencies are involved in this process. Describe how this process is systematically utilized to ensure that the program's educational objectives remain consistent with the institutional mission, the program constituents' needs and these criteria

Criterion 3: Student Outcomes

A. **Student Outcomes:** List the student outcomes for the program, including any outcomes that the program has defined beyond the required outcomes specified in the general criteria and any applicable program criteria

B. **Publication of Student Outcomes:** Describe where the student outcomes are publicly stated

Criterion 4: Continuous Improvement

A. Student Outcomes:

1. A listing and description of the assessment processes used to gather the data upon which the evaluation of each student outcome is based. Examples of data collection processes may include, but are not limited to, specific exam questions, student portfolios, internally developed assessment exams, senior project presentations, nationally-normed exams, oral exams, focus groups, industrial advisory committee meetings, or other processes that are relevant and appropriate to the program.

2. The frequency with which these assessment processes are carried out

3. The expected level of attainment for each of the student outcomes

4. Summaries of the results of the evaluation process and an analysis illustrating the extent to which each of the student outcomes is being attained

5. How the results of the assessment process are documented and maintained

6. How and where the student outcome assessment process is documented

B. Continuous Improvement: Describe how the results of evaluation processes for the student outcomes and any other available information have been systematically used as input in the continuous improvement of the program. Describe the results of any changes (whether or not effective) in those cases where re-assessment of the results has been completed. Indicate any significant future program improvement plans based upon recent evaluations. Provide a brief rationale for each of these planned changes.

C. Additional Information: Copies of any of the assessment instruments or materials referenced in 4.A. and 4.B must be available for review at the time of the visit. Other information such as minutes from meetings where the assessment results were evaluated and where recommendations for action were made could also be included.

Criterion 5: Curriculum

A. **Program Curriculum:**

1. Complete Table 5-1 that describes the plan of study for students in this program including information on course offerings in the form of a recommended schedule by year and term along with average section enrollments for all courses in the program over the two years immediately preceding the visit. If there is more than one curricular path, Table 5-1 should be provided for each path. State whether you are on quarters or semesters.

2. Describe how the program's requirements are consistent with the program educational objectives.

3. Describe how the program's requirements and its associated prerequisite structure support the attainment of the student outcomes.

4. Attach a flowchart or worksheet that illustrates the prerequisite structure of the program's required courses.

5. For each curricular area specifically addressed by either the general criteria or the applicable program criteria, describe how your program meets the specific requirements for this applicable program area.

6. If your program allows cooperative education to satisfy curricular requirements specifically addressed by either the general or program criteria, describe the academic component of this experience and how it is evaluated by the faculty.

7. Describe the materials (course syllabi, textbooks, sample student work, etc.), that will be available for review during the visit to demonstrate achievement related to this criterion. (See the 2021-2022 APPM Section I.E.5.b.(2) regarding display materials.)

B. **Course Syllabi:** In Appendix A, include a syllabus for each course used to satisfy the mathematics, science, and discipline-specific requirements required in Criterion 5 or any applicable program criteria

Table 5-1 Curriculum

Program Name

Course (Department, Number, Title) List all courses in the program by term starting with first term of the first year and ending with the last term of the final year.	Indicate Whether Course is Required, Elective or a Selected Elective by an R, an E or an SE.[1]	Subject Area (Credit Hours)					Last Two Terms the Course was Offered: Year and, Semester, or Quarter	Average Section Enrollment for the Last Two Terms the Course was Offered[3]
		Math[2]	Sciences[2]	Computing Topics Mark with an F or A for Fundamental or Advanced	General Education	Other		
Add rows as needed to show all courses in the curriculum.								
TOTALS-ABET BASIC-LEVEL REQUIREMENTS								
OVERALL TOTAL CREDIT HOURS FOR COMPLETION OF PROGRAM								

1. **Required** courses are required of all students in the program, **elective** courses (often referred to as open or free electives) are optional for students, and **selected elective** courses are those for which students must take one or more courses from a specified group.
2. If math and science courses are chosen from a list indicate this and include information elsewhere on the courses that students may choose from.
3. For courses that include multiple elements (lecture, laboratory, recitation, etc.), indicate the maximum enrollment in each element. For selected elective courses, indicate the maximum enrollment for each option.

Instructional materials and student work verifying compliance with ABET criteria for the categories indicated above will be required during the campus visit.

Criterion 6: Faculty

A. **Faculty Qualifications:** Describe the qualifications of the faculty and how they are adequate to cover all the curricular areas of the program and as well as any applicable program criteria. This description should include the composition, size, credentials, and experience of the faculty. Complete Table 6-1. Include faculty resumes in Appendix B.

B. **Faculty Workload:** Complete Table 6-2, Faculty Workload Summary and describe this information in terms of workload expectations or requirements (for the year of the Self Study).

C. **Faculty Size:** Discuss how the faculty serving in the program are of sufficient number to maintain continuity, stability, oversight, student interaction, and advising for the program

D. **Professional Development:** Provide detailed descriptions of the professional development activities for each faculty member.

E. **Authority and Responsibility of Faculty:** Describe the role played by the faculty with respect to course creation, modification, and evaluation, their role in the definition and revision of program educational objectives, definition and revision of any additional student outcomes, and their role in the attainment of the student outcomes. Describe the roles of others on campus, e.g., dean or provost, with respect to these areas

Table 6-1. Faculty Qualifications

Name of Program

| Faculty Name | Highest Degree Earned- Field and Year | Rank [1] | Type of Academic Appointment[2] T, TT, NTT | FT or PT[3] | Years of Experience | | | Professional Registration/ Certification | Level of Activity[4] H, M, or L | | |
					Govt./Ind. Practice	Teaching	This Institution		Professional Organizations	Professional Development	Consulting/summer work in industry

Instructions: Complete table for each member of the faculty in the program. Add additional rows or use additional sheets if necessary. Updated information is to be provided at the time of the visit.

1. Code: P = Professor   ASC = Associate Professor   AST = Assistant Professor   I = Instructor   A = Adjunct   O = Other
2. Code: TT = Tenure Track   T = Tenured   NTT = Non Tenure Track
3. At the institution
4. The level of activity, high, medium or low, should reflect an average over the year prior to the visit plus the two previous years.

Table 6-2. Faculty Workload Summary

Name of Program

Faculty Member (name)	PT or FT[1]	Classes Taught (Course No./Credit Hrs.) Term and Year[2]	Program Activity Distribution[3]			% of Time Devoted to the Program[5]
			Teaching	Research or Scholarship	Other[4]	

1. FT = Full Time Faculty or PT = Part Time Faculty, at the institution

2. For the academic year for which the Self-Study Report is being prepared.

3. Program activity distribution should be in percent of effort in the program and should total 100%.

4. Indicate sabbatical leave, etc., under "Other."

5. Out of the total time employed at the institution.

Criterion 7: Facilities

A. Offices, Classrooms, and Laboratories

B. Computing Resources

C. Guidance

D. Maintenance and Upgrading of Facilities

E. Library Services

F. Overall Comments on Facilities

Criterion 8: Institutional Support

A.   **Leadership:** Describe the leadership of the program and discuss its adequacy to ensure the quality and continuity of the program and how the leadership is involved in decisions that affect the program.

B.   **Program Budget and Financial Support:**
   1.   Describe the process used to establish the program's budget and provide evidence of continuity of institutional support for the program. Include the sources of financial support including both permanent (recurring) and temporary (one-time) funds.
   2.   Describe how teaching is supported by the institution in terms of graders, teaching assistants, teaching workshops, etc.
   3.   To the extent not described above, describe how resources are provided to acquire, maintain, and upgrade the infrastructures, facilities, and equipment used in the program.
   4.   Assess the adequacy of the resources described in this section with respect to the students in the program being able to attain the student outcomes.

C.   **Staffing:** Describe the adequacy of the staff (administrative, instructional, and technical) and institutional services provided to the program. Discuss methods used to retain and train staff.

D.   **Faculty Hiring and Retention**:
   1.   Describe the process for hiring of new faculty.
   2.   Describe strategies used to retain current qualified faculty

E.   **Support of Faculty Professional Development**: Describe the adequacy of support for faculty professional development, how such activities such as sabbaticals, travel, workshops, seminars, etc., are planned and supported.

Program Criteria

All programs seeking accreditation from the Computing Accreditation Commission of ABET must demonstrate that they satisfy all of the specific Program Criteria implied by the program title.

- Computer Science
- Cybersecurity
- Information Systems
- Information Technology

Computer Science

- In addition to outcomes 1 through 5, graduates of the program will also have an ability to:
  - 6. Apply computer science theory and software development fundamentals to produce computing-based solutions. [CS]

- The curriculum requirements specify topics, but do not prescribe specific courses. These requirements are:
  a) Computer science: At least 40 semester credit hours (or equivalent) that must include:
     1. Substantial coverage of algorithms and complexity, computer science theory, concepts of programming languages, and software development.
     2. Substantial coverage of at least one general-purpose programming language.
     3. Exposure to computer architecture and organization, information management, networking and communication, operating systems, and parallel and distributed computing.
     4. The study of computing-based systems at varying levels of abstraction.
     5. A major project that requires integration and application of knowledge and skills acquired in earlier course work.
  b) Mathematics: At least 15 semester credit hours (or equivalent) that must include discrete mathematics and must have mathematical rigor at least equivalent to introductory calculus. The additional mathematics might include course work in areas such as calculus, linear algebra, numerical methods, probability, statistics, or number theory.
  c) At least six semester credit hours (or equivalent) in natural science course work intended for science and engineering majors. This course work must develop an understanding of the scientific method and must include laboratory work.

- Faculty: Some full-time faculty members must have a Ph.D. in computer science.

Cybersecurity

- Graduates of the program will have an ability to:
  - 1. Analyze a broadly-defined security problem and apply principles of cybersecurity to the design and implementation of solutions.
  - 2. Apply security principles and practices to maintain operations in the presence of risks and threats.
  - 3. Communicate effectively in a variety of professional contexts.
  - 4. Recognize professional responsibilities and make informed judgments in cybersecurity practice based on legal and ethical principles.
  - 5. Function effectively as a member of a team engaged in cybersecurity activities.-The curriculum requirements specify topics, but do not prescribe specific courses. These requirements are:

(a) At least 45 semester credit hours (or equivalent) of computing and cybersecurity course work. The course work must include:

1. Application of techniques, skills, and tools necessary for cybersecurity practice.
2. Application of the crosscutting concepts of confidentiality, integrity, availability, risk, adversarial thinking, and systems thinking.
3. Fundamental topics from each of the following:

   a) Data Security: protection of data at rest, during processing, and in transit.

   b) Software Security: development and use of software that reliably preserves the security properties of the protected information and systems.

   c) Component Security: the security aspects of the design, procurement, testing, analysis, and maintenance of components integrated into larger systems.

   d) Connection Security: security of the connections between components, both physical and logical.

   e) System Security: security aspects of systems that use software and are composed of components and connections.

   f) Human Security: the study of human behavior in the context of data protection, privacy, and threat mitigation.

   g) Organizational Security: protecting organizations from cybersecurity threats and managing risk to support successful accomplishment of the organizations' missions.

   h) Societal Security: aspects of cybersecurity that broadly impact society as a whole.

4. Advanced cybersecurity topics that build on crosscutting concepts and fundamental topics to provide depth.

(b) At least 6 semester credit hours (or equivalent) of mathematics that must include discrete mathematics and statistics.

Information Systems

Information Systems Environment – An information systems environment is an organized domain of activity within which information systems are used to support and enable the goals of the activity. Examples of information systems environments include (but are not limited to) business, health care, government, not-for-profit organizations, and scientific disciplines.

Information Systems (continue …)

- In addition to outcomes 1 through 5, graduates of the program will also have an ability to:

◦ 6. Support the delivery, use, and management of information systems within an information systems environment. [IS]

- The curriculum requirements specify topics, but do not prescribe specific courses. These requirements are:

a) Information systems: At least 30 semester credit hours (or equivalent) that include coverage of fundamentals and applied practice in application development; data and information management; information technology infrastructure; systems analysis, design and acquisition; project management; and the role of information systems in organizations.

b) Information systems environment: At least 15 additional semester credit hours (or equivalent) of a cohesive set of topics that provide an understanding of an information systems environment.

c) Quantitative analysis or methods that must include statistics.

- Faculty: Some full-time faculty members, including those responsible for the information systems curriculum development, must hold a terminal degree with a program of study in information systems.

Information Technology

In addition to outcomes 1 through 5, graduates of the program will also have an ability to:

- 6. Use systemic approaches to select, develop, apply, integrate, and administer secure computing technologies to accomplish user goals. [IT]

- The curriculum requirements specify topics, but do not prescribe specific courses. The curriculum must include coverage of fundamentals and applied practice in the following:

A.   Information Technology: At least 45 semester credit hours (or equivalent) of course work that must include:

1.   Fundamentals and applied practice in:
   a)   information management.
   b)   integrated systems.
   c)   platform technologies.
   d)   system paradigms.
   e)   user experience design.
   A.   networking.
   B.   software development and management.
   C.   web and mobile systems.
2.   Advanced and supplemental IT topics that build on fundamentals and applied practice to provide depth.
3.   Experiential learning appropriate to the program.
4.   Principles and practices of IT project management.

B.   Mathematics: At least six semester credit hours (or equivalent) that must include discrete mathematics, along with other appropriate mathematical topics.

Appendices

A. Course Syllabi

B. Faculty Vitae

C. Equipment List

D. Institutional Summary