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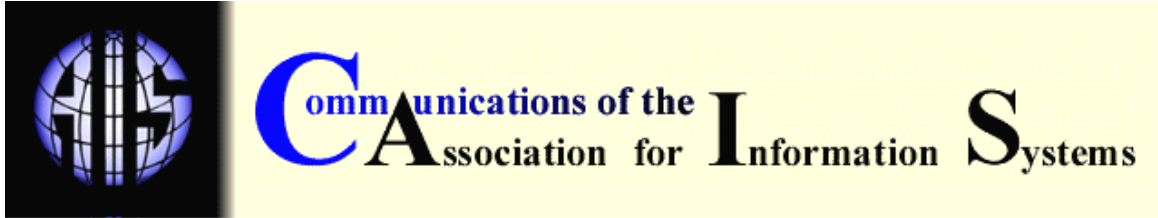
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INFORMATION SYSTEMS ACCREDITATION: PREPARATION, PROCESS, AND STANDARDS

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ABSTRACT

The objective of this paper is to provide an overview of the accreditation process for information systems (IS) programs. This tutorial includes:

- an overview of the accreditation criteria and standards for IS programs;
- the process of information systems accreditation from ABET's Computing Accreditation Commission (CAC) perspective;
- a review of the process of planning and preparing for the accreditation team visit;
- the experience of gathering sample course materials from faculty; and
- a discussion of the accreditation process from the review team's perspective

KEYWORDS: accreditation, program evaluation, criteria, standards, information systems accreditation, abet accreditation

I. INTRODUCTION

This paper provides an overview of the accreditation process for information systems (IS) programs. Accreditation refers to the granting of approval to an institution of learning by an official review board after the school and/or program meets specific minimum requirements.

The need for accreditation in information systems is not new. For more than fifteen years, individuals articulated the desire for IS inclusion in the overall accreditation process [Gorgone et al, 1987]. For a variety of reasons, the accreditation for information systems programs did not materialize until July 2001 when ABET (Sidebar 1) formally defined criteria for accrediting programs in Information Systems.

When a program seeks to be accredited, it voluntarily submits to peer scrutiny. If successful, ABET publicly proclaims this achievement. The accreditation process allows a program to reflect introspectively on its:

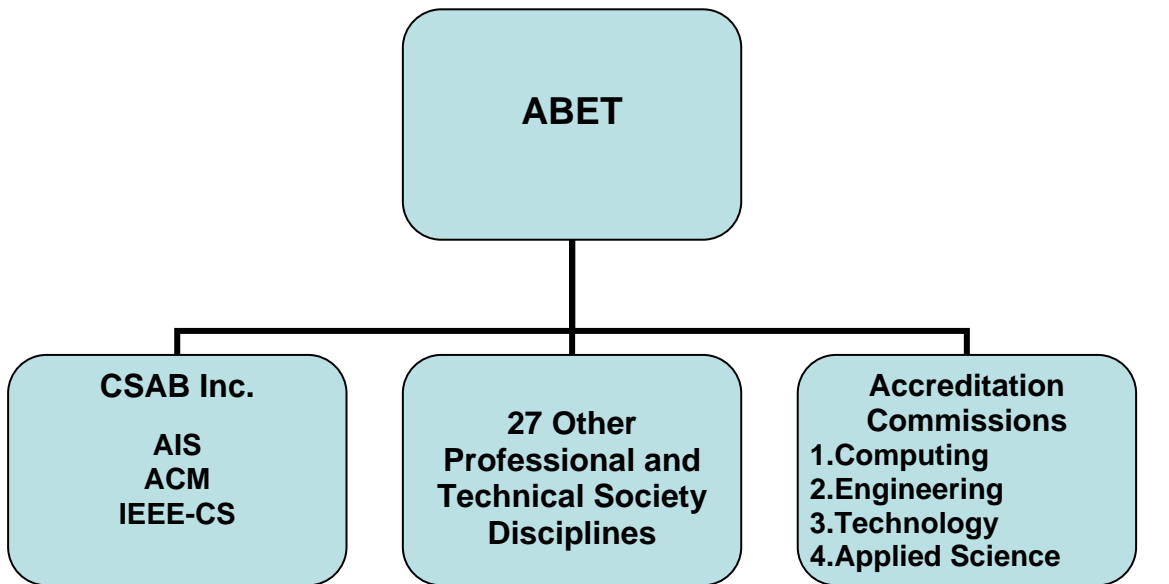
- mission,
- goals, and
- learning objectives.

The process collectively brings together members of a faculty to examine their own courses and methods and, ultimately, improve the learning environment of its students (ABET 2006).

The paper is organized as follows: The Information Systems Criteria (Intent) are introduced in Section II, and the Standards are presented in Appendix I. An IS program must meet the Criteria to be accredited. The process of information systems (IS) accreditation is discussed from ABET's Computing Accreditation Commission (CAC) perspective in Section III. This discussion is followed by a review of the process of planning and preparing for the accreditation team visit and the importance of gathering and presenting sample course materials from faculty and students (Section IV). Section V examines the process from the team's view.

SIDEBAR I. ABET

ABET Inc. is the name of the Accreditation Board for Engineering and Technology located in Baltimore, MD. It is the recognized accreditor for college and university programs in applied science, computing, engineering, and technology. It is a federation of 28 professional and technical societies. For the computer sciences, it includes CSAB, Inc. (formerly the Computer Sciences Accreditation Board), whose members are AIS, ACM, and IEEE-CS. CSAB, in turn, represents the three computer societies as a member of ABET, Inc. The Computer Accreditation Commission is one of several ABET commissions that decide on individual program accreditation. The organization chart is shown in Figure 1.



Through accreditation, ABET provides quality assurance in higher education in its fields. ABET, over 70 years old, currently accredits some 2,700 programs at over 550 colleges and universities nationwide. Over 1,500 volunteers participate annually in ABET activities.

Source: ABET [2006].

II. 2005-2006 INFORMATION SYSTEMS CRITERIA

All undergraduate information systems¹ programs are evaluated for accreditation based on the

¹ As of February 2006, ABET only accredits undergraduate IS programs. Standards for MSIS programs were not yet in place. AIS is researching the possibility of masters-level program accreditation for 2008. Programs interested in masters-level accreditation should contact the author.

published Criteria. For a program to be accredited, it must meet **all** the Criteria. The Criteria represent the minimum requirement.

The Criteria, listed below, are stated in terms of their intent. Standards provide an example of one way the Criteria can be met. Appendix I lists the standards for IS for the 2006-2007 accreditation cycle.

OBJECTIVES AND ASSESSMENTS

Intent: The program documents educational objectives that are consistent with the mission of the institution. Each accredited program maintains processes to assess its own progress regularly against its objectives and uses the results of the assessments to identify program improvements and to modify the program's objectives.

STUDENTS

Intent: Students can complete the program in a reasonable amount of time. Students have ample opportunity to interact with their instructors and are offered timely guidance and advice about the program's requirements and their career alternatives. Students who graduate the program meet all program requirements.

FACULTY

Intent: Faculty members are current and active in the discipline. They possess the necessary technical breadth and depth to support a modern information systems program.

CURRICULUM

Intent: The curriculum combines professional requirements with general education requirements and electives to prepare students for a professional career in the information systems field, for further study in information systems, and for functioning in modern society. The professional requirements include coverage of basic and advanced topics in information systems as well as an emphasis on an IS environment. Curricula are consistent with widely recognized models and standards.

TECHNOLOGY INFRASTRUCTURE

Intent: Computer resources are available, accessible, and adequately supported to enable students to complete their course work and to support faculty teaching needs and scholarly activity.

INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES

Intent: The institution's support for the program and the financial resources available to the program are sufficient to provide an environment in which the program can achieve its objectives. Support and resources are sufficient to provide assurance that an accredited program will retain its strength throughout the period of accreditation.

PROGRAM DELIVERY

Intent: There are enough faculty members to cover the curriculum reasonably and to allow an appropriate mix of teaching and scholarly activity.

INSTITUTIONAL FACILITIES

Intent: Institutional facilities including the library, other electronic information retrieval systems, computer networks, classrooms, and offices are adequate to support the objectives of the program.

III. OVERVIEW OF ABET’S ACCREDITATION PROCESS

The accreditation process can be described in six stages: investigation, initiation, pre-visit, visit, post-visit, and accreditation action. Each is briefly discussed in this section.

INVESTIGATION STAGE

Investigation is usually the first step in accreditation. A program may be interested in being accredited and initiates an information gathering process. An inquiry is made to ABET for information and process requirements. Criteria are downloaded from the web site at www.abet.org for analysis. In this stage, a program may send an observer to one of the two yearly training sessions for selected program evaluators, review currently accredited programs, contact faculty of accredited programs and/or hire an experienced accreditation consultant. An important question to answer is: Does the program meet the ABET Criteria (Intent) as described in Section II or does it meet the Standards in Appendix I. These Standards are one way in which the Criteria can be met. If a program meets *all* the “Standards,” then it de facto meets all the Criteria. However, the program has the option of using an alternate way of meeting each of the Criteria. Before proceeding further, the institution seeking accreditation should carry out a thorough analysis of its program to determine if it meets the minimum standards defined by the ABET Criteria.

INITIATION STAGE

Once the program feels relatively comfortable with its fact-finding analysis in the investigation stage, it moves to the initiation stage. A discussion with the administration of the institution is initiated to determine support for the process and the expenditure of the required resources of time and cost. A one-course time release is usually needed by a faculty member. Current accreditation fees can be ascertained at the ABET web site, www.abet.org. A self-study questionnaire document is requested from ABET or downloaded from ABET’s web site and the program enters the pre-visit stage.

The time line shown, shown in Table 1, presents the sequence of events from the initiation stage until a decision is reached.

Table 1. Time Line for the Accreditation Process

Stage	Time	Action
Initiation	2 years before visit	
Pre-Visit	1 year before visit..... Before January 1..... By July 1..... By July 1..... August.....	Prepare self-study and collect course materials Submit request for evaluation Pay fee for visit Submit Self study Schedule visit
Visit	Sept – October	Visit
Post-Visit	January-March..... 30 days after statement	Preliminary statement Response by institution
Accreditation Action	July	Computing Accreditation Commission
Notification	August-September	Formal notification of results

PRE-VISIT STAGE

Undertake the self-study analysis of the program. This step should usually begin about one year prior to the actual accreditation on-campus visit. The self-study questionnaire is of paramount importance to the accreditation process and must be submitted to ABET by July 1 of the year of the visit. The self-study questionnaire is a detailed report documenting all attributes of the program being evaluated. The faculty must analyze all aspects of its program in the report. The report includes detailed documentation of:

• program objectives	• curriculum details	• library collection
• student outcomes	• computing facilities	• library staffing
• periodic assessments of the program	• personnel support	• library budget,
• student advisement,	• faculty size	• funding process
• student-faculty interaction	• faculty oversight	• promotion and tenure procedures
• faculty interests	• adequacy of resources	• admissions criteria
• faculty qualifications	• administrative leadership	• transfer procedures
• scholarly contributions	• institutional support,	• complete faculty vitae

It also includes other details of all aspects of the program. All courses in the major must be identified and documented. Detailed course syllabi with course content and learning objectives must be prepared, collected, organized, and made available to the visiting team. Student advising and graduation records must be documented and accurate.

The institution needs to submit a “Request for Evaluation” form, found on the ABET web site, to ABET by January 31 of the year the program is to be visited. By July 1 of the same year, the institution must submit the Self-Study Report and pay the accreditation visit fee². All faculty, department chairs, dean, and administration including the president are made aware of the upcoming visit.

Some time in late spring or early summer the institution is sent a list of visiting team members and the name of the team chair. This team acts as the program evaluators. The institution is requested to review the list and can challenge any team member (team chair and/or program evaluators). Former faculty, graduates, consultants, and anyone with a potential conflict of interest may be excluded. The institution does not need to clarify or justify a challenge. Once the team is set, the visiting team chair contacts the program’s representative by September to set the visiting dates. The visiting team will usually visit on Sunday-Monday-Tuesday or Thursday-Friday-Saturday.

Once the team chair is in contact with the institution, he/she is the primary contact for the program until the following July accreditation action meeting takes place. The institution usually assists the team chair in making arrangements for lodging at a convenient hotel and nearby restaurants for meals. The institution does not pay for any of the transportation or local expenses unless they choose to host a modest luncheon on the first day of the visit. The team chair is in charge of the visiting schedule and usually contacts the program’s representative to help prepare the visiting schedule prior to the visit. The institution needs to remain flexible as the team chair may request a change of schedule either prior to the visit and/or during the visit depending upon the request of the team members and the need to interview people in specific areas.

² See www.abet.org for accreditation fees. In 2006, this visit fee is \$8,682.00 for one program and a team of three people.

VISIT STAGE

Generally, the team arrives by early Sunday afternoon and leaves by 4:00 pm on Tuesday. The team usually consists of three people. Course exhibits (such as textbooks, course syllabi, assignments, graded student work) are usually reviewed on Sunday afternoon, and the review continues throughout the team's visit. The materials should be placed in a secure meeting room for team access during the visit. Team members may also tour facilities in the afternoon on Sunday. A private dinner and closed working session is conducted in the evening. Monday (Day One) and Tuesday (Day Two) are used for interviewing. The team will want to see the president or equivalent, provost, dean, department chair, department faculty, computer center director, computer laboratory director, librarian, registrar, career center director, faculty in supporting departments (such as business, ethics and quantitative analysis), and students during the visit.

Day One (Monday)

On the first full day of interviews the team meets early with top administration to explain the purpose of the visit and receives a briefing from the administration. Team members then meet individually with faculty, administrators and others who impact or interact with the program and students.

If the institution elects to host a group luncheon on Day One of the visit, they may do so. The institution is in charge, but they must keep the affair modest. The host institution may invite whomever they choose to visit with the team during lunch. They usually invite alumni, advisory board members, administrations, faculty from related departments, and faculty from the program being visited. Some host the lunch in a private dining room, faculty dining room, faculty/staff cafeteria, or student cafeteria.

In the afternoon, the team may have questions, and the team chair may ask for additional information. The team goes to dinner alone and meets alone in the evening to discuss their findings and prepare for the second day of interviews.

Day Two (Tuesday)

On the second day, the team chair usually meets with the department chair, asks for any additional information and may request changes in the interview schedule. Team members continue their interviews or tour and may continue to review course exhibits. The team lunches privately and prepares for the exit interview. The team chair, as a professional courtesy and so as not to surprise or embarrass the department chair at the exit interview, informally debriefs the department chair. The department chair can point out any misinterpretation of facts or observations by the team, and the team chair can obtain clarification on any ambiguities. Then, the team usually debriefs the dean and/or provost prior to meeting with the president in order to give them a "heads-up" as to what will take place at the exit interview with the president. At the end of the day and before leaving the campus, the team has the official exit interview with top administration and their invitees. The visiting team does not disclose or discuss its tentative recommendations for accreditation with the institution. The team presents its factual findings orally, usually by reading from their draft preliminary report, and the listeners can correct any factual errors at that time. The team leaves the campus immediately after the exit interview, usually by 4:00 pm, to catch a plane to be home that evening.

POST-VISIT STAGE

For two weeks after the exit interview, the institution is allowed to send clarifying information to the team chair. Schools being accredited should listen closely to key words, such as "deficiency," "weakness," and/or "concern," at the exit interview because the team will usually read from their draft preliminary statement. A program must meet all Criteria Intent (in Section II above or all the Standards in Appendix I) to be accredited. Remember, the Standards in Appendix I are only **one** way to meet the Criteria Intent in Section II. If the program meets all the Standards in Appendix I, it would then meet the Criteria Intent described in Section II of this paper. A program has the

option of providing an alternate way of meeting the Criteria Intent, but the burden of proof rests with the institution.

The team prepares a draft preliminary statement (which includes the team's preliminary findings and recommendations) to officers of ABET's Computing Accreditation Commission (CAC). The draft preliminary report undergoes two detailed editing stages by CAC editors, referred to as first-level and second-level editing, before it is transmitted to the institution visited for review. This process can take several months since it is all volunteer time.

The CAC editing includes copy editing, consistency checking, use of appropriate language, format verification, and language style. The CAC editors, first- and second-level, are selected from ABET's Computing Accreditation Commissions Executive Committee. Their experience with accreditation includes serving as previous team chairs and program evaluators. They check the teams' consistency of findings with its conclusions and recommendations. They check consistency across the individual team's reports. The preliminary statement is checked for format and appropriate phraseology against an approved pre-determined standard language template style. They verify that any findings of problems reported by the team are correctly placed into one of the three appropriate categories (deficiency, weakness, and/or concern). The editors will also provide the Computing Accreditation Commission their individual recommendation based on the findings in the report. The first-level editors and team chair work together until they are satisfied with the report's preliminary statements. The CAC second-level editors and CAC first-level editors circulate the draft reports between them until they are satisfied. The reports are then sent to the ABET office for additional copy editing before the preliminary statements are mailed to the institution.

The institution will usually receive the preliminary statement in February or March and is given 30 days to respond to it. The main purpose of the response is to correct factual errors or observations that were made at the time of the visit. Inadequacies may be corrected under certain circumstances. That is, if the corrections are made and are in full effect during the year of the visit. All corrections need signed documented proof. The institution may provide additional information to the team chair up to the Computing Accreditation Commission (CAC) Annual Meeting in mid-July (see below).

If the team finds problems, they can put them into one of three categories:

- *Deficiency*: If there is any deficiency, the program is not accreditable.
- *Weakness*: If there is a weakness, the program can be visited again or be asked to supply a report once the weakness is eliminated.
- *Concern*: If there is a concern, the program should consider addressing the issue.

ACCREDITATION ACTION STAGE

The team chair usually presents the team findings at the ABET Computing Accreditation Commission (Sidebar II) Annual Meeting in July. The commissioners ask questions and discuss the team's findings and recommendations. The commissioners vote on accreditation actions after each presentation. At the end of all presentations, all decisions are reviewed for consistency and accuracy and a full vote of commissioners is taken again.

The accreditation actions voted on by the commissioners at the CAC Annual Meeting can be one of the following:

NGR – Next General Review – 6 years

IR – Interim Report – Report in 2 years

IV – Interim Visit – Visit in 2 years

RE – Report Extended

VE – Visit Extended

SC – Show Cause – Visit in the next cycle

NA – Not Accreditable (the only appealable action)

SIDEBAR II. ABET'S COMPUTING ACCREDITATION COMMISSION

Figure 1 in Sidebar I shows four ABET commissions, one of which is the Computing Accreditation Commission (CAC). ABET delegates responsibility for taking accreditation action on undergraduate computing programs to CAC. The CAC consists of an executive committee and the current year's team chairs. They are collectively referred to as commissioners. They review, evaluate, and vote on all accreditation action.

A final statement is prepared by the team chair and officers of the Computing Accreditation Commission. The final statement, approved by the full membership of the commission and sent to the institution by September, concludes the overview of the accreditation process.

IV. PLANNING AND PREPARING FOR THE VISIT

This section reviews the planning and preparation for an accreditation visit.

In the pre-visit stage, the program should offer two or three target visiting dates in September and October. The faculty, department chairs, and administration (e.g., dean, provost, president) block-out some suggested time and dates in their calendar. It is difficult to get every one together for the visit. Be sure that the dean and president will be available as well as students and faculty members. Be sure that the team can meet with all the people discussed in Section III.

The person in-charge of the on-campus visit should be in contact with the team chair and help prepare the visiting schedule. Listen carefully to suggestions made by the team chair. Be sure faculty, administrators, and students are available for scheduled meetings. A good cross section of students will provide the team with a broad view of the program. Be sure to include a large number of students with senior standing at the meeting.

Be sure each member of the accreditation team is given good maps or provide a faculty member or student to escort the team members to and from appointments. A list of good restaurants and directions to them is much appreciated. Also include restaurants close by their hotel that might provide quick take-out food.

The team will need a private place to work during the two and a half-day visit. They will need access during that time to review and analyze course materials. It is recommended that a lockable room, with key provided to each team member, be made available to them with sufficient space (tables and chairs) for them to work and for all the materials to be exhibited. Access to the Internet, telephone and a copy machine is always appreciated. The course exhibits should include all course syllabi, learning objectives, textbooks, materials, handouts, assignments, exams, quizzes, and graded student work needs to be on display. Samples of graded student work for each course must include examples of excellent, good and poor work. Showing examples of student work containing faculty members' written feedback is also important during the visit.

As the self-study report is being prepared during the pre-visit stage, the program unit should collect course materials for the Fall and Spring semesters prior to the visiting year. A faculty member is usually assigned the responsibility for the self-study questionnaire report and for collecting faculty vita and course display materials. This person is usually the one who needs release time. All program faculty need to be involved. The large amount of material required takes time and effort to collect and organize. A well-organized course exhibit will go a long way

to leaving a positive impression on the team. Missing course material will leave doubts. The course exhibits are so important that they should be placed in a separate locked room several weeks in advance for the visiting team to review during the visit.

Prior to the visit, usually in August-September, the institution mails copies of the Self-Study and catalog(s) to each team member together with random samples of the program graduates' transcripts. For privacy, the transcripts are coded and all student identification is removed. The team will analyze the transcripts prior to the visit.

V. VISITING TEAM'S VIEW OF THE VISIT

The team reads and analyzes the self-study report and other material (such as catalog, brochures) provided prior to the visit. The campus visit usually takes place in September and October. On the day they arrive, during their first evening meeting, the visiting team usually compares notes to ascertain the program's strengths and weaknesses based on analysis of the self-study, college catalog, web site materials and other materials provided by the institution. The main purpose of the on-site visit is to evaluate features that cannot be adequately addressed in the self-study report. For example, the team will evaluate such factors as faculty and student morale, intellectual atmosphere, stability and continuity of the faculty, caliber of the faculty, staff and students, and the learning outcomes of the education. They examine in detail such items as control and organizational structure, programs offered, degrees conferred, maturity and stability of the institution, number of students enrolled in the program, college, and institution, admission requirements, graduation requirements, teaching staff, teaching loads, publications, tenure policies, physical facilities, finances, curricular content and employment history of graduates. Student support is evaluated, including registration, career and academic advising, library, computing and computing laboratory resources.

The initial focus is on the program's stated objectives and learning outcomes. They attempt to verify that the institution regularly assessed the outcomes against its objectives, made improvements to the program, and modified the program's objectives based on the assessment feedback. The team then focuses on the faculty's qualifications to support the program. Do they make regular scholarly contributions to the profession? Do they remain current in their field? Do they publish and attend professional conferences regularly? Do they hold terminal degrees?

VI. AIS' ROLE IN ACCREDITATION

Association for Information Systems (AIS) became a major participant in the information systems accreditation process in 1998 with the appointment of John T. Gorgone and John C. Henderson by then president Gordon B. Davis as the AIS representatives to a joint AIS/ACM/IEEE-CS/AITP committee that would investigate the feasibility of accreditation of information systems programs. Funding of the study was provided by NSF (NSF DUE 9812278) with Doris L. Doris, John T. Gorgone, John Henderson and Willis King serving as principal investigators.

AIS is a member of CSAB, Inc. together with ACM and IEEE-Computer Science. In turn, CSAB, Inc. represents the three societies collectively as a member of ABET, Inc. AIS recommends program evaluators to CSAB. CSAB trains and provides the program evaluators to the Computing Accreditation Commission (CAC). CAC selects Team Chairs from experienced program evaluators and the Team Chairs become members of the Computing Accreditation Commission.

The Computing Accreditation Commission is a group within ABET that provides the accreditation of undergraduate information systems programs. As of January 2006, twenty undergraduate IS programs were already accredited in fifteen institutions. The institutions are Drexel University, Illinois State University, Jacksonville State University, James Madison University, Kennesaw State University, Miami University (of Ohio), University of Nebraska at Omaha, New Jersey Institute of Technology, University of North Florida, Pace University, Robert Morris University,

University of Scranton, Slippery Rock University, University of South Alabama and Virginia Commonwealth University.

ABET, Inc. does not currently accredit masters-level programs and does not provide accreditation of programs outside of the United States. AIS is particularly interested in accreditation of both undergraduate and masters-level IS programs as well as granting accreditation to IS programs outside the US. At the December 2005 AIS Council meeting, the Vice President for Accreditation was charged to investigate the feasibility of accrediting masters-level programs globally. The report is due to AIS Council at the December 2006 meeting.

VII. CONCLUSION

Accreditation is a voluntary effort. Accreditation standards are proposed by professional societies such as AIS to promote meeting minimum program standards in the profession. It is carried out by a large group of dedicated professional volunteers. If you want to become involved in accreditation activities the best place to begin is to complete an application to become a program evaluator³ and/or have your program unit start with the investigation stage above. This paper provides an overview of the ABET accreditation process. It presents the IS Criteria because it is of overriding importance for participants to understand them and their implications. A brief review of the process of planning and preparing for the accreditation team visit and a discussion of the process from the team's view are presented as helpful aids and hints for participants interested in accreditation activities.

ACKNOWLEDGEMENT

This paper is based on a tutorial workshop on accreditation presented at the AMCIS 2004 conference in New York.

Editor's Note: This article was received on December 6, 2005 and was published on March __, 2006.

REFERENCES

EDITOR'S NOTE: The following reference list contains the address of World Wide Web pages. Readers who have the ability to access the Web directly from their computer or are reading the paper on the Web, can gain direct access to these references. Readers are warned, however, that

1. these links existed as of the date of publication but are not guaranteed to be working thereafter.
2. the contents of Web pages may change over time. Where version information is provided in the References, different versions may not contain the information or the conclusions referenced.
3. the authors of the Web pages, not CAIS, are responsible for the accuracy of their content.
4. the author of this article, not CAIS, is responsible for the accuracy of the URL and version information.

³ Program Evaluator qualification, requirements, and applications can be located at www.csab.org

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APPENDIX I. STANDARDS FOR IS PROGRAMS

OBJECTIVES

- I-1. The program must have documented educational objectives.
- I-2. The program's objectives must include expected outcomes for graduating students.
- I-3. Mechanisms must be in place to review the program and the courses periodically.
- I-4. The results of the program's assessment must be used to help identify and implement program improvement.
- I-5. The results of the program's review and the actions taken must be documented.

STUDENTS

- II-1. Courses must be offered with sufficient frequency for students to complete the program in a timely manner.
- II-2. Information systems programs must be structured to ensure effective interaction between teaching faculty and students.
- II-3. Advising on program completion, course selection and career opportunities must be available to all students.
- II-4. There must be established standards and procedures to ensure that graduates meet the requirements of the program.

FACULTY

- III-1. The interests, qualifications, and scholarly contributions of the faculty members must be sufficient to teach the courses, plan and modify the courses and curriculum, and to remain abreast of current developments in information systems.
- III-2. All faculty members must have a level of competence that would normally be obtained through graduate work in information systems.
- III-3. A majority of the faculty members should hold terminal degrees. Some full-time faculty members must have a Ph.D. in information systems or a closely related area.

CURRICULUM

General Standards

- IV-1. The curriculum must include at least 30 semester-hours of study in information systems topics.
- IV-2. The curriculum must contain at least 15 semester-hours of study in an information systems environment, such as business.
- IV-3. The curriculum must include at least 9 semester-hours of study in quantitative analysis as specified below under quantitative analysis.

IV-4. The curriculum must include at least 30 semester-hours of study in general education to broaden the background of the student.

Information Systems

IV-5. All students must take a broad-based core of fundamental information systems material consisting of at least 12 semester hours.

IV-6. The core materials must provide basic coverage of the hardware and software, a modern programming language, data management, networking and telecommunications, analysis and design, and role of IS in organizations.

IV-7. Theoretical foundations, analysis, and design must be stressed throughout the program.

IV-8. Students must be exposed to a variety of information and computing systems and must become proficient in one modern programming language.

IV-9. All students must take at least 12 semester hours of advanced course work in information systems that provides breadth and builds on the IS core to provide depth.

Information Systems Environment

IV-10. The 15 semester hours must be a cohesive body of knowledge to prepare the student to function effectively as an IS professional in the IS environment.

Quantitative Analysis

IV-11. The curriculum must include at least 9 semester-hours of quantitative analysis beyond pre-calculus.

IV-12. Statistics must be included.

IV-13. Calculus or discrete mathematics must be included.

Additional Areas of Study

IV-14. The oral and written communications skills of the student must be developed and applied in the program.

IV-15. There must be sufficient coverage of global, economic, social and ethical implications of computing to give students an understanding of a broad range of issues in these areas

IV-16. Collaborative skills must be developed and applied in the program.

INFRASTRUCTURE

V-1. Each student must have adequate and reasonable access to the systems needed for each course.

V-2. Documentation for hardware and software must be readily accessible to faculty and students.

V-3. All faculty members must have access to adequate computing resources for class preparation and for scholarly activities.

V-4. There must be adequate support personnel to install and maintain computing resources.

V-5. Instructional assistance must be provided for the computing resources.

INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES

VI-1. Support for faculty must be sufficient to enable the program to attract and retain high-quality faculty capable of supporting the program's objectives.

VI-2. There must be sufficient support and financial resources to allow faculty members to attend national technical meetings with sufficient frequency to maintain competence as teachers and scholars.

VI-3. There must be support and recognition of scholarly activities.

VI-4. There must be office support consistent with the type of program, level of scholarly activity, and needs of the faculty members.

VI-5. Adequate time must be assigned for the administration of the program.

VI-6. Upper levels of administration must provide the program with the resources and atmosphere to function effectively with the rest of the institution.

- VI-7. Resources must be provided to acquire and maintain laboratory facilities that meet the needs of the program.
- VI-8. Resources must be provided to support library and related information retrieval facilities that meet the needs of the program.
- VI-9. There must be evidence of continuity of institutional support and financial resources.

PROGRAM DELIVERY

- VII-1. There must be enough full-time faculty members with primary commitment to the program to provide continuity and stability.
- VII-2. Full-time faculty members must oversee all course work.
- VII-3. Full-time faculty members must cover most of the total classroom instruction.
- VII-4. Faculty members must remain current in the discipline.
- VII-5. All full-time faculty members must have sufficient time for scholarly activities and professional development.
- VII-6. Advising duties must be a recognized part of faculty members' workloads.

INSTITUTIONAL FACILITIES

- VIII-1. The library that serves the information systems program must be adequately staffed with professional librarians and support personnel.
- VIII-2. The library's technical collection must include up-to-date textbooks, reference works, and publications of professional and research organizations.
- VIII-3. Systems for locating and obtaining electronic information must be available.
- VIII-4. Classrooms must be adequately equipped for the courses taught in them.
- VIII-5. Faculty offices must be adequate to enable faculty members to meet their responsibilities to students and for their professional needs.

ABOUT THE AUTHOR

John T. Gorgone is Richard H. Rubin Professor of Computer Information Systems at Bentley College. He received the ACM's Karl V. Karlstrom Outstanding Educator Award in 2002 and the AITP Educator of the Year Award in 1999. He has been involved in accreditation for 20 years and is AIS' Vice President for Accreditation. He chaired national computer conferences such as AMCIS 2001 in Boston and played a major role in developing ACM/AIS/AITP national curricula models in IS. He is noted in many biographical listings, most recently in *2000 Outstanding Scientists of the 20th Century (2000)*. His publications appear in *MIS Quarterly*, *Communications of AIS*, *Information Strategy: The Executive's Journal*, *The Data Base for Advances in Information Systems*, *Information and Management* and *Washington Report*. His research interests include computer wireless networks, IT work force issues, IS curricula and accreditation standards. He recently examined the feasibility of accrediting computer information systems programs in a study funded by NSF. He is a management and IT consultant to Fortune 500 companies, U.S. State boards of higher education, and college presidents.

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