# Criteria for Accrediting Computer Science Programs
## Effective for Evaluations during the 2004-2005 Accreditation Cycle

## I. Objectives and Assessments

Intent

The program has documented, measurable objectives, including expected outcomes for graduates. The program regularly assesses its progress against its objectives and uses the results of the assessments to identify program improvements and to modify the program's objectives.

Standards

I-1.    The program must have documented, measurable objectives.

I-2.    The program's objectives must include expected outcomes for graduating students.

I-3.    Data relative to the objectives must be routinely collected and documented, and used in program assessments.

I-4.    The extent to which each program objective is being met must be periodically assessed.

I-5.    The results of the program's periodic assessments must be used to help identify opportunities for program improvement.

I-6.    The results of the program's assessments and the actions taken based on the results must be documented.

## II. Student Support

Intent

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

Standards

II-1.   Courses must be offered with sufficient frequency for students to complete the program in a timely manner.

II-2.   Computer science courses must be structured to ensure effective interaction between faculty/teaching assistants and students in lower division courses and between faculty and students in upper division courses.

II-3.   Guidance on how to complete the program must be available to all students.

II-4.   Students must have access to qualified advising when they need to make course decisions and career choices.

II-5.   There must be established standards and procedures to ensure that graduates meet the requirements of the program.

## III.  Faculty

<u>Intent</u>

Faculty members are current and active in the discipline and have the necessary technical breadth and depth to support a modern computer science program. There are enough faculty members to provide continuity and stability, to cover the curriculum reasonably, and to allow an appropriate mix of teaching and scholarly activity.

<u>Standards</u>

III-1.   There must be enough full-time faculty members with primary commitment to the program to provide continuity and stability.

III-2.   Full-time faculty members must oversee all course work.

III-3.   Full-time faculty members must cover most of the total classroom instruction.

III-4.   The interests and qualifications of the faculty members must be sufficient to teach the courses and to plan and modify the courses and curriculum.

III-5.   All faculty members must remain current in the discipline.

III-6.   All faculty members must have a level of competence that would normally be obtained through graduate work in computer science.

III-7.   Some full-time faculty members must have a Ph.D. in computer science.

III-8.   All full-time faculty members must have sufficient time for scholarly activities and professional development.

III-9.   Advising duties must be a recognized part of faculty members' workloads.

## IV.  Curriculum

<u>Intent</u>

The curriculum is consistent with the program's documented objectives. It combines technical requirements with general education requirements and electives to prepare students for a professional career in the computer field, for further study in computer science, and for functioning in modern society. The technical requirements include up-to-date coverage of basic and advanced topics in computer science as well as an emphasis on science and mathematics.

Standards

Curriculum standards are specified in terms of semester hours of study. Thirty semester hours generally constitutes one year of full-time study and is equivalent to 45 quarter hours. A course or a specific part of a course can only be applied toward one standard.

## General

IV-1.  The curriculum must include at least 40 semester hours of up-to-date study in computer science topics.

IV-2.  The curriculum must contain at least 30 semester hours of study in mathematics and science as specified below under Mathematics and Science.

IV-3.  The curriculum must include at least 30 semester hours of study in humanities, social sciences, arts and other disciplines that serve to broaden the background of the student.

IV-4.  The curriculum must be consistent with the documented objectives of the program.

## Computer Science

IV-5.  All students must take a broad-based core of fundamental computer science material consisting of at least 16 semester hours.

IV-6.  The core materials must provide basic coverage of algorithms, data structures, software design, concepts of programming languages, and computer organization and architecture.

IV-7.  Theoretical foundations, problem analysis, and solution design must be stressed within the program's core materials.

IV-8.  Students must be exposed to a variety of programming languages and systems and must become proficient in at least one higher-level language.

IV-9.  All students must take at least 16 semester hours of advanced course work in computer science that provides breadth and builds on the core to provide depth.

## Mathematics and Science

IV-10. The curriculum must include at least 15 semester hours of mathematics.

IV-11. Course work in mathematics must include discrete mathematics, differential and integral calculus, and probability and statistics.

IV-12. The curriculum must include at least 12 semester hours of science.

IV-13. Course work in science must include the equivalent of a two-semester sequence in a laboratory science for science or engineering majors.

IV-14. Science course work additional to that specified in Standard IV-13 must be in science courses or courses that enhance the student's ability to apply the scientific method.

## Additional Areas of Study

IV-15. The oral communications skills of the student must be developed and applied in the program.

IV-16. The written communications skills of the student must be developed and applied in the program.

IV-17. There must be sufficient coverage of social and ethical implications of computing to give students an understanding of a broad range of issues in this area.

## V. Laboratories and Computing Facilities

Intent

Laboratories and computing facilities are available, accessible, and adequately supported to enable students to complete their course work and to support faculty teaching needs and scholarly activities.

Standards

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 facilities for class preparation and for scholarly activities.

V-4.  There must be adequate support personnel to install and maintain the laboratories and computing facilities.

V-5.  Instructional assistance must be provided for the laboratories and computing facilities.

## VI. 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 the program will retain its strength throughout the period of accreditation.

Standards

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 all 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 that the institutional support and financial resources will remain in place throughout the period of accreditation.


## VII. 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.

Standards

VII-1. The library that serves the computer science program must be adequately staffed with professional librarians and support personnel.

VII-2. The library's technical collection must include up-to-date textbooks, reference works, and publications of professional and research organizations such as the ACM and the IEEE Computer Society.

VII-3. Systems for locating and obtaining electronic information must be available.

VII-4. Classrooms must be adequately equipped for the courses taught.

VII-5. Faculty offices must be adequate to enable faculty members to meet their responsibilities to students and for their professional needs.