



جامعة الملك فهد للبترول والمعادن  
King Fahd University of Petroleum & Minerals

## **Guidelines for Self-Assessment of Engineering & Computing Programs at KFUPM**

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## **Introduction**

The Guidelines for Self-Assessment of Engineering & Computing Programs at KFUPM are prepared and formatted in accordance with the ABET Self-Study Questionnaire. This is intentionally done so that the Self-Assessment report of an engineering or computing program at KFUPM serves as a good basis and data for the ABET accreditation cycle. Self-Assessment is expected to be carried out at least a year before the official submission of the self assessment report to ABET for re-accreditation.

The Guidelines follow the ABET template closely. The guidelines are made of 8 criteria which are explained in details in the following sections. Each criterion is measured by a number of standards. The standards are numbered to closely follow the ABET subdivision of the criterion. Each standard is explained in order to help in preparing and writing the report.

It is thus expected that completing the Self Assessment report constitutes a major step toward preparing the ABET Self-Study Questionnaire for accreditation purpose.

## **Self Assessment Criteria**

There are eight criteria that has to be included in preparing the self assessment report which are exactly matching the ABET criteria which is the accrediting body for engineering and computing programs at the university. These criteria are as follows and they will be explained after:

Background information

Criterion 1: Students

Criterion 2: Program Educational Objectives

Criterion 3: Student Outcomes

Criterion 4: Continuous Improvement

Criterion 5: Curriculum

Criterion 6: Faculty

Criterion 7: Facilities

Criterion 8: Institutional Support

Program Criteria

### **Background Information**

*This section should include a general and brief information about the program*

#### **Contact Information**

- List name, mailing address, telephone number, fax number, and e-mail address for the chairman of the program

#### **Program History**

- Include the year implemented and the date of the last general review.
- Summarize major program changes with an emphasis on changes occurring since the last general review.

#### **Options**

- List and describe any options, tracks, included in the program.

#### **Concerns from Previous Evaluation(s) and the Actions Taken to Address Them**

- List the issues raised from last assessment or accreditation visit and the actions taken to address that.

## Criterion 1: Students

Students must have adequate support to complete the program in a timely manner and must have ample opportunity to interact with their instructors and receive timely academic assistance, academic advising and career advising. The students, who graduate from the program, must meet all program requirements. To meet this criterion the standards in this section must be satisfied.

### 1.1: Student Admissions

*Minimum qualification requirements and an admission process are used to screen students for admission to the program.*

- Describe the minimum qualification requirements for admission of students to the program.
- Describe the process for admission of students to the program.

### 1.2: Evaluating Students Performance

*The program must have procedures to monitor student's progress and to evaluate student performance.*

- Describe the procedures followed to monitor students' progress.
- Describe how the students' petitions regarding curricular matters are managed by the department.
- Describe the process used to evaluate student performance.

### 1.3: Transfer Students and Transfer Courses

*The department must have clear policies for the acceptance of transfer students and for the validation of courses taken for credit outside the University.*

- State the policy and the criteria for the acceptance of transfer students
- State the criteria used to evaluate the course equivalency for acceptance of course credits earned elsewhere.
- Complete and include Table 1.1

**Table 1.1 Transfer Students for Past Five Academic Years**

| Academic Year | Number of Transfer Students Enrolled |
|---------------|--------------------------------------|
|               |                                      |
|               |                                      |
|               |                                      |

#### **1.4: Advising and Career Guidance**

*Access to qualified advising must be available to all students for them to make informed decisions about degree plan, curricular and career matters.*

- Describe how students are informed of the program requirements.
- Describe the advising system and indicate how its effectiveness is measured.
- Describe how the interaction between students and faculty is achieved.
- Describe the student counseling system and how students get professional counseling when needed.
- Describe opportunities available for students to interact with practitioners, and to have membership in technical and professional societies.

#### **1.5: Graduation Requirements**

*The program must have a process to ensure that each graduate completes all graduation requirements for the program.*

- Describe the process followed to ensure each student completes all graduation requirements of the program before he is certified to be a graduate.

#### **1.6: Student Enrollment**

*A program should review enrollment and graduation trends to find out if the trends are unsatisfactory or satisfactory.*

- Summarize the enrollment and graduation trends for the past five years. Complete and include Table 1.2.
- Comment on the trends. If the trends fall short of expectation, mention the problem causes and what actions are planned to improve the situation.

**Table 1.2 Enrollment Trends for Past Five Academic Years**

|                           | <b>Year</b> | <b>Year</b> | <b>Year</b> | <b>Year</b> | <b>Year</b> |
|---------------------------|-------------|-------------|-------------|-------------|-------------|
| Full-time Students        |             |             |             |             |             |
| Part-time Students        |             |             |             |             |             |
| Students FTE <sup>1</sup> |             |             |             |             |             |
| Graduates                 |             |             |             |             |             |

1 FTE = Full-Time Equivalent

## **Criterion 2: Program Educational Objectives**

The program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve. The program must have in place:

- a. Published educational objectives that are consistent with the mission of the institution and that of the department;
- b. A process that periodically documents and demonstrates that the objectives are based on the needs of the various constituencies;
- c. An assessment and evaluation process that periodically documents and demonstrates the degree to which the objectives are attained.

### **2.1: Mission Statement**

*The institution and the department shall have published mission statements.*

- Include in the report the institutional, college and/ or the department's mission statements.
- Indicate where the mission statements are published.

### **2.2: Program Educational Objectives**

*The program shall have Program Educational Objectives that are consistent with the institutional and departmental mission statements.*

- List the Program Educational Objectives.

### **2.3 Consistency of the Program Educational Objectives with the Mission of the Institution**

*The Program Educational Objectives must be consistent with the institutional and departmental mission statements.*

- Describe how the Program Educational Objectives are consistent with the mission of the institution.
- Indicate where Program Educational Objectives are published.

### **2.4: Program Constituencies**

*The program shall have constituencies, whose needs are reflected in the Program Educational Objectives and are met with the attainment of the objectives to a degree.*

- List and describe all constituencies.
- Describe how the program objectives meet the needs of all constituencies

## **2.5: Process for Revision of the Program Educational Objectives**

*The program must have a process that periodically documents and demonstrates that Program Educational Objectives are based on the needs of the constituencies.*

- Describe the process used for a periodic review and updating of the Program Educational Objectives, indicating frequency and timing of assessments.
- Show by documentation how the constituencies are engaged and the needs of the constituencies are considered in developing Program Educational Objectives.
- Describe the changes made in the objectives, if any, and show reasons for making the changes.

## **Criterion 3: Student Outcomes**

The Student Outcomes are pointed statements that describe what students are expected to learn and be able to do by the time of graduation. These relate to skills, knowledge, and behaviors that students acquire during their study period in the program.

A program must have a set of outcomes that are linked to the educational objectives, and these outcomes are achieved from the delivery of the courses in the curriculum. An assessment and evaluation of Student Outcome requires processes that analyze and identify, collect and prepare data, interpret results and evidences to evaluate the achievement of Student Outcomes.

### **3.1: Student Outcomes**

*A program must have documented measurable Student Outcomes encompassing program requirements that are based on the needs of the program's constituencies and applicable program criteria.*

- List the Student Outcomes.
- Indicate where they are documented outside of this report.
- Describe how the Student Outcomes meet the needs of constituencies.
- Provide a mapping to the (a) through (k) Student Outcomes if the student outcomes are stated differently than ABET a-k outcomes.

### **3.2: Relationship of Student Outcomes to Program Educational Objectives.**

*The Student Outcomes must be related to program educational objectives.*

- Indicate how the Student Outcomes map to program educational objectives.
- Discuss how the Student Outcomes lead to the achievement of educational objectives.

### 3-3: Mapping Student Outcomes to Course Outcomes

*The Student Outcomes are enabled by all courses in a curriculum, as each course has a set of learning outcomes which are linked to the Student Outcomes.*

- Describe the relationship of courses in a curriculum to the Student Outcomes.
- Complete and include Table 3.1, linking each course to Student Outcomes.

Table 3.1 Mapping of Courses with Student Outcomes

| Courses | Student Outcomes |   |   |   |
|---------|------------------|---|---|---|
|         | 1                | 2 | 3 | 4 |
| 1.      |                  |   |   |   |
| 2.      |                  |   |   |   |
| 3.      |                  |   |   |   |
| 4.      |                  |   |   |   |

## Criterion 4: Continuous Improvement

This section documents your processes for regularly assessing and evaluating the extent to which the student outcomes are being attained. It should also describe how the results of these processes are utilized to affect continuous improvement of the program.

### 4.1: Student Outcomes

*There must be an effective assessment and evaluation process that periodically documents and demonstrates the degree to which the Student Outcomes are attained. The self-assessment results must be used in making decisions regarding program improvements and to identify actions needed. The program materials must be displayed (e.g. course syllabi, samples of student work, survey data etc.) and available for inspection by the assessment team. The display materials should be well arranged to relate them to each Student Outcome*

- List and describe the assessment and evaluation process in place to measure each Student Outcome.
- Indicate the frequency and timing of assessment and evaluation of each student outcome.
- Describe what, how and from whom data are collected.
- Indicate how assessment results are used and by whom.
- Describe the level of achievement of each Student Outcome.
- Comment on the level of achievement by comparing results with the metric goals of the program.
- Summarize the results and achievement for all Student Outcomes
- Discuss what evidence will be provided to support the level of achievement of each Student Outcome.

- Describe the available information, including those from Criteria 2 and 3 processes, used in making decisions regarding program improvements.
- Provide a listing of all materials available for inspection.
- Describe how the materials are displayed to link them to each Student Outcome.

#### 4.2: Continuous Improvement

*The Program must show that actions are taken to address the weaknesses and concerns noted in the previous self-assessment cycle in order to seek continuous improvement of the program.*

- Describe all new actions taken to improve the program by indicating why each action is needed in the context of the self-assessment findings, when the action was implemented and the results of implementation.
- Complete Table 4.3 as the summary list of all actions taken.

**Table 4.3: Actions Taken to Improve the Program**

| Action for Program Improvement | Why action Necessary | When Taken | How Taken | Visible Results, if any |
|--------------------------------|----------------------|------------|-----------|-------------------------|
|                                |                      |            |           |                         |
|                                |                      |            |           |                         |
|                                |                      |            |           |                         |

Copies of any of the assessment instruments or materials referenced in 4.1.and 4.2 must be available for review at the time of the assessment visit.

### Criterion 5: Curriculum

The curriculum must be designed and organized to achieve the program's educational objectives and outcomes. Also course learning outcomes must support the Student Outcomes. The curriculum combines technical and professional requirements with general education requirements and electives to prepare students for professional career. Students must be prepared for engineering practice [or computing practice for computer science] through the curriculum culminating in a major design experience. The breakdown of the curriculum must satisfy the standards specified in this section. Curriculum standards are specified in terms of credit hours of study. A semester credit hour equals one class hour or two to three laboratory hours per week. The semester is approximately fifteen weeks.

#### 5.1: Program Curriculum

This depends on your program (Engineering or Computing---computer science [CS])

**For Engineering Programs:** *The requirement of minimum credit hours and distribution in mathematics and basic sciences, engineering topics and general*

education as specified by the ABET must be met. The professional component of a curriculum must include the following:

- (a) one year of a combination of college level mathematics and basic sciences (some with experimental experience) appropriate to the discipline. Basic sciences are defined as biological, chemical, and physical sciences.
- (b) one and one-half years of engineering topics, consisting of engineering sciences and engineering design appropriate to the student's field of study. The engineering sciences have their roots in mathematics and basic sciences but carry knowledge further toward creative application. These studies provide a bridge between mathematics and basic sciences on the one hand and engineering practice on the other. Engineering design is the process of devising a system, component, or process to meet desired needs. It is a decision-making process (often iterative), in which the basic sciences, mathematics, and the engineering sciences are applied to convert resources optimally to meet these stated needs.
- (c) a general education component that complements the technical content of the curriculum and is consistent with the program and institution objectives.

**For Computer Science Program only:** The curriculum must combine technical and professional requirements with general education requirements and electives to prepare students for a professional career and further study in the computing discipline associated with the program, and for functioning in modern society. The technical and professional requirements must include at least one year of up-to-date coverage of fundamental and advanced topics in the computing discipline associated with the program. In addition, the program must include mathematics appropriate to the discipline beyond the pre-calculus level. For each course in the major required of all students, its content, expected performance criteria, and place in the overall program of study must be published. Students must have the following amounts of course work or equivalent educational experience:

a. **Computer science [CS]:** One and one-third years that must include:

- 1. Coverage of the fundamentals of algorithms, data structures, software design, concepts of programming languages and computer organization and architecture. [CS]
- 2. An exposure to a variety of programming languages and systems. [CS]
- 3. Proficiency in at least one higher-level language. [CS]
- 4. Advanced course work that builds on the fundamental course work to provide depth. [CS]

b. **One year of science and mathematics:**

- 1. **Mathematics:** At least one half year that must include discrete mathematics. The additional mathematics might consist of courses in areas such as calculus, linear algebra, numerical methods, probability, statistics, number theory, geometry, or symbolic logic. [CS]

2. Science: A science component that develops an understanding of the scientific method and provides students with an opportunity to experience this mode of inquiry in courses for science or engineering majors that provide some exposure to laboratory work. [CS]

The following section is common for all programs

*Students must be prepared for design practice and one year is the lesser of 32 semester hours (or equivalent) or one-fourth of the total credits required for graduation.*

- Complete Table 5-1 that describes the plan of study for students in this program including information on course offerings in the required curriculum in the form of a recommended schedule by year and term along with maximum 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 and complete a separate table for each option in the program.
- Describe how your program meets the requirements in terms of hours and depth of study for each subject area (Math & Basic Sciences, Engineering Topics [[Or Computing Topics in case of Computer Science Program](#)], and General Education) specifically addressed by either the general criteria or the program criteria.

## **5.2: Curriculum Consistency**

*The curriculum must be consistent with, and supports the program's stated objectives and outcomes.*

- Describe how the curriculum aligns with the program educational objectives.
- Describe how the curriculum and its associated prerequisite structure support the attainment of the Student Outcomes.

## **5.3: Curriculum Flow Chart**

*A flow chart showing the prerequisite structure of the program's courses must be available to allow sequential offering of courses.*

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

**Table 5-1 Curriculum  
Program Name**

| Course<br>(Department, Number, Title)<br>List all courses in the program by term starting with first term of first year<br>and ending with the last term of the final year. |                               | Indicate Whether<br>Course is<br>Required,<br>Elective or a<br>Selected Elective<br>by an R, an E or<br>an SE. <sup>2</sup> | Curricular Area (Credit Hours) |   |                      |       | Last Two<br>Terms the<br>Course was<br>Offered:<br>Year and,<br>Semester,<br>or<br>Quarter | Average<br>Section<br>Enrollment<br>for the Last<br>Two Terms<br>the Course<br>was<br>Offered <sup>1</sup> |
|---|-------------------------------|---|--------------------------------|---|----------------------|-------|--|--|
|   |                               |   | Math &<br>Basic<br>Sciences    | Engineering<br>Topics<br>Check if<br>Contains<br>Significant<br>Design (√)<br>[Computing<br>Topics Mark<br>with an F or A<br>for<br>Fundamental or<br>Advanced<br>ONLY FOR<br>COMPUTER<br>SCIENCE<br>PROGRAM] | General<br>Education | Other |  |  |
|   |                               |   |                                |   |                      |       |  |  |
|   |                               |   |                                |   |                      |       |  |  |
| <i>Add rows as needed to show all courses in the curriculum.</i>  |                               |   |                                |   |                      |       |  |  |
| TOTALS-ABET BASIC-LEVEL REQUIREMENTS  |                               |   |                                |   |                      |       |  |  |
| OVERALL TOTAL CREDIT HOURS FOR THE DEGREE   |                               |   |                                |   |                      |       |  |  |
| PERCENT OF TOTAL  |                               |   |                                |   |                      |       |  |  |
| Total must<br>satisfy either<br>credit hours or<br>percentage   | Minimum Semester Credit Hours |   | 32 Hours                       | 48 Hours  |                      |       |  |  |
|   | Minimum Percentage            |   | 25%                            | 37.5 %  |                      |       |  |  |

1. For courses that include multiple elements (lecture, laboratory, recitation, etc.), indicate the average enrollment in each element.
  2. Required courses are required of all students in the program, elective courses are optional for students, and selected electives are courses where students must take one or more courses from a specified group.
- Instructional materials and student work verifying compliance with ABET criteria for the categories indicated above will be required during the campus visit.

#### **5.4: Design Component**

*Design component of the curriculum must be integrated throughout the program.*

- Describe the major design experience that prepares students for engineering practice [\[computing practice in case of Computer Science\]](#). Describe how this experience is based upon the knowledge and skills acquired in earlier coursework and incorporates appropriate engineering standards and multiple design constraints.

#### **5.5: Field Training**

*If field training is a necessary component of the curriculum, it must be included in the program as a core component.*

- 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.

#### **5.6: Documentation**

*The department must have well documented and systematic processes that demonstrate achievement related to this criterion.*

- 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.

#### **5.7: Course Syllabus**

*All courses in a program, required and electives, must have a syllabus that provide necessary information about the course itself, topics covered and the learning outcomes.*

- Include a syllabus for each course offered in the program that is used to satisfy the mathematics, science, and discipline-specific requirements required by Criterion 5 or any applicable program criteria. The syllabi format should be consistent for each course, must not exceed two pages per course, and, at a minimum, contain the following information:
  - Department, course number, and title of course
  - Designation as a Required or Elective course
  - Course (catalog) description
  - Prerequisites
  - Textbook(s) and/or other required material
  - Course learning outcomes

- Topics covered
- Class/laboratory schedule, i.e., number of sessions each week and duration of each session
- Contribution of course to meeting the requirements of Criterion 5
- Relationship of course to Student Outcomes
- Person(s) who prepared this description and date of preparation
- Assemble all course syllabi and submit as Appendix A.

## **Criterion 6: Faculty**

The Program maintains a faculty sufficient to provide stability and ongoing quality improvement for the programs offered. They have the educational background or experience consistent with their expected contribution to the program. Faculty members must be current and active in their discipline and have the necessary technical depth and breadth to support the program to cover the curriculum adequately and effectively, and to allow for scholarly activities. To meet this criterion the standards in this section must be satisfied.

### **6.1: Faculty Qualifications**

*The department must have enough full time faculty who are committed to the program to provide adequate coverage of the program areas/courses, continuity and stability. The experience and expertise of faculty must meet the need of the department for curriculum revision, course development, course delivery and assessment of students' learning. All faculty members must have a level of competence that would normally be obtained through graduate work in the discipline, relevant experience or relevant scholarship. The majority of the faculty should hold a Ph.D. (or its equivalent) in the discipline.*

- Complete and include Table 6.1 the faculty qualifications
- Submit resumes of all faculty members in the department, prepared in a format included in Appendix B.
- Describe how information in Tables 6.1 and the faculty qualifications indicated in resumes are sufficient to validate standard 6-1, commenting on the faculty size, competency and workload, and student-faculty ratio.

### **6.2 Faculty Workload**

*Workload for each faculty should be included*

- Complete and include the faculty workload Table 6.2.

**Table 6-1: Faculty Qualifications**  
**Name of Program**

| Faculty Name | Highest Degree<br>Earned- Field and<br>Year | Rank <sup>1</sup> | Type of Academic<br>Appointment <sup>2</sup><br>T, TT, NTT | FT or PT <sup>4</sup> | Years of Experience |          |                  | Professional Registration/<br>Certification | Level of Activity<br>H, M, or L |                             |                                       |
|--------------|---|-------------------|--|-----------------------|---------------------|----------|------------------|---|---------------------------------|-----------------------------|---------------------------------------|
|              |   |                   |  |                       | Govt./Ind. Practice | Teaching | This Institution |   | Professional<br>Organizations   | Professional<br>Development | Consulting/summer<br>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. The level of activity, high, medium or low, should reflect an average over the year prior to the visit plus the two previous years.
4. At the institution

**Table 6-2: Faculty Workload Summary**

Name of Program

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

1. FT = Full Time Faculty or PT = Part Time Faculty, at the institution
2. For the academic year for which the self-study 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.

### **6.3: Faculty Size**

*The program must demonstrate that there are opportunities in place for the students to interact with faculty members for integrated learning experience.*

- Describe the type of opportunities available for students to interact with faculty regarding their education program through advising and counseling.
- Indicate how well students utilize these opportunities.
- Describe how faculty interact with industrial and professional practitioners including employers of students
- Provide the extent to which faculty members participate in university services.

### **6.4: Professional Development**

*All faculty members must remain current in the discipline and sufficient time must be provided for scholarly activities and professional development. Also, effective programs for faculty development must be in place.*

- Describe the criteria for faculty to be deemed current in the discipline (in line with the University approved criteria). How does it apply to faculty members in the program and what percentage of them is current?
- Describe the means for ensuring that full time faculty members have sufficient time for scholarly and professional development.
- Describe existing faculty development programs at the departmental and university level. Demonstrate their effectiveness in achieving faculty development.
- Indicate how frequently faculty programs are evaluated and if the evaluation results are used for improvement.

### **6.5: Authority and Responsibility of Faculty**

*The program must demonstrate that faculty plays important roles in relation to the guidance, leadership and development of the program.*

- Describe the role played by the faculty with respect to their guidance of the program, and in the development and implementation of the processes for the evaluation, assessment, and continuing improvement of the program, including its program educational objectives and Student Outcomes.
- Describe the roles of others on campus, e.g., dean or provost, with respect to these areas.

## **Criterion 7: Facilities**

Classrooms, laboratories, and associated equipment must be adequate to support the attainment of Student Outcomes and to provide an atmosphere conducive to learning. Modern tools, computing resources and laboratories appropriate to the program must be available, accessible and systematically maintained and upgraded. Students must be provided with appropriate guidance regarding the use of the tools, equipment, computing resources and laboratories.

### **7.1: Offices, Classrooms and Laboratories**

*The offices provided to faculty and staff, and class rooms must be functionally spacious, furnished and equipped to support teaching and learning environment.*

- Describe facilities provided that support teaching and learning environment to achieve program objectives and outcomes
- Describe the adequacy of offices provided to faculty and staff including teaching assistants, technicians and clerical personnel
- Describe the laboratory facilities including those containing computers.

### **7.2: Computing Resources**

*The computing resources, hardware and software, including networks must be easily available to all students and faculty for teaching, learning, and scholarly activities.*

- Describe the departmental and institutional computing facilities and resources available to students and faculty, specifying any limitations that may impact teaching and learning.
- List all available computer software, and list courses in which they are used.
- Include specifics regarding resources in faculty offices.

### **7.3: Guidance**

*Students must have a clear guidance regarding the use of equipments and tools.*

- Describe how students are provided with appropriate guidance regarding use of equipments, computing resources and labs.

### **7.4: Maintenance and Upgrading of Facilities**

*Support personnel must be available to install, maintain and manage departmental hardware, software networks and laboratory equipment.*

- Describe the type and number of personnel available to install, maintain and manage departmental hardware, software and networks. Address the adequacy of such support services.
- Describe the type and number of personnel available to install, maintain and manage laboratory equipment. Address the adequacy of such support services.

### **7.5: Library Services**

*A well-stocked library with electronic access for information must be available to faculty, students and staff for reference books, literature and retrieval of information needed for teaching and learning, research and scholarly activities*

- Assess the available facilities of the library (or libraries) that serve the program, and the staffing, including both size and qualifications.
- Assess the adequacy of library's collection relative to the needs of the program and faculty.
- Describe and assess the adequacy of the process by which faculty may request the library to order books or subscriptions.
- Assess the library's systems of locating and obtaining electronic information.

### **7.6: Overall Comments on Facilities**

*Overall observations and comments on facilities used by faculty, students and staffs should be included.*

- Describe how the program ensures the facilities, tools, and equipment used in the program are safe for their intended purposes

## **Criterion 8: Institutional Support**

The institution's support for the program and the financial resources available to the program must be sufficient to meet all program requirements and administer the program effectively to assure quality and continuity of the program. Resources must be sufficient to attract and retain, and provide for the continued professional development of a qualified faculty. Resources must also be sufficient to acquire, maintain and operate facilities and equipment appropriate for the achievement of educational objectives and outcomes. Support and resources are sufficient to provide assurance that program will retain its strength.

### **8.1: Leadership**

*The program must have a leadership to ensure quality and continuity of the program.*

- 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.

### **8.2: Program Budget and Financial Support**

*Adequate financial resources must be available to meet the budgetary needs to run the program.*

- Describe the sources of financial support and provide evidence of continuity of institutional support.
- Describe the process used to establish the program budget.
- Describe the adequacy of the financial support.

### **8.3: Staffing**

*The resources required to acquire, maintain, and operate facilities and equipment must be sufficient. Personnel to support the services provided by the institution and department must be adequate.*

- Describe the sufficiency of support available.
- Point out the areas where lack of sufficient support hinders acquisition, maintenance and operation of facilities and equipment to the extent it compromises teaching and learning.
- Describe the adequacy of support personnel to meet program needs and specify any limitations that impact the quality of services.

### **8.4: Faculty Hiring and Retention**

*The process of recruiting and retaining highly qualified faculty members must be in place and clearly documented. Also processes and procedures for faculty evaluation and promotion must be consistent with institution mission statement. These processes must be periodically evaluated to ensure that it is meeting its objectives.*

- Describe the process for hiring of new faculty
- Describe strategies used to retain current qualified faculty.
- Describe the process used to ensure highly qualified faculty members are recruited to the program.
- Indicate methods used to retain excellent faculty members.
- Indicate how evaluation and promotion processes are in line with institution mission statement.

- Indicate how frequently this process is evaluated and if the evaluation results are used to improve the process.
- Describe programs and processes in place for faculty motivation and job satisfaction. Obtain faculty input using faculty survey.

### **8.5: Support of Faculty Professional Development**

*Effective professional development programs must be available to all faculty members.*

- Describe the available faculty professional development programs and how they are financially supported.
- Describe how professional development activities are planned and administered.
- Describe the adequacy of the support for faculty professional development.

### **Program Criteria**

*Describe how the program satisfies any applicable program criteria. If already covered elsewhere in the self study report, provide appropriate references.*

## **APPENDICES**

### **Appendix A – Course Syllabi**

Please use the following format for the course syllabi (2 pages maximum in Times New Roman 12 point font)

1. Course number and name
2. Credits and contact hours
3. Instructor's or course coordinator's name
4. Text book, title, author, and year
  - a. other supplemental materials
5. Specific course information
  - a. brief description of the content of the course (catalog description)
  - b. prerequisites or co-requisites
  - c. indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program
6. Specific goals for the course
  - a. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic.
  - b. explicitly indicate which of the Student Outcomes listed in Criterion 3 or any other outcomes are addressed by the course.
7. Brief list of topics to be covered

## **Appendix B – Faculty Vitae**

Please use the following format for the faculty vitae (2 pages maximum in Times New Roman 12 point type)

1. Name
2. Education – degree, discipline, institution, year
3. Academic experience – institution, rank, title (chair, coordinator, etc. if appropriate), when (ex. 1990-1995), full time or part time
4. Non-academic experience – company or entity, title, brief description of position, when (ex. 1993-1999), full time or part time
5. Certifications or professional registrations
6. Current membership in professional organizations
7. Honors and awards
8. Service activities (within and outside of the institution)
9. Briefly list the most important publications and presentations from the past five years – title, co-authors if any, where published and/or presented, date of publication or presentation
10. Briefly list the most recent professional development activities

## **Appendix C – Equipment**

Please list the major pieces of equipment used by the program in support of instruction.