



Greater Caribbean Regional Engineering Accreditation System
(GCREAS)

INTERNATIONAL STEERING COMMITTEE OF THE PROJECT

Preliminary Consensus Document

THIS DOCUMENT SUMMARIZES THE PRELIMINARY CONSENSUS REACHED TO DATE ON **STANDARDS, REGULATIONS, PROCEDURES, GOVERNANCE MODEL & FINANCING MECHANISM** FOR THE GREATER CARIBBEAN REGIONAL ENGINEERING ACCREDITATION SYSTEM. PROPOSALS ARE BASED ON THE RECOMMENDATIONS BY THE *BASE STUDY ON SYSTEMS AND MODELS OF ACCREDITATION FOR ENGINEERING CAREERS* (BASE STUDY), AS WELL AS ON THE RESULTS OF THE WORKING PARTIES THAT DELIBERATED DURING THE 2ND MEETING OF THE GCREAS' INTERNATIONAL STEERING COMMITTEE THAT TOOK PLACE IN SANTO DOMINGO, THE DOMINICAN REPUBLIC, ON THE 1ST, 2ND AND 3RD OF JULY, 2009,.

CONFIDENTIAL DRAFT, SUBJECT TO AMENDMENTS

Santo Domingo, Dominican Republic,

July 24, 2009

Standards

Base on the recommendations of the Base Study, and on the consultation done about the stipulations for accrediting engineering careers of ABET and CEAB, 8 evaluation criteria were adopted and a set of quality standards for each criterion, and means of verification for each standard, according to the following description.

Item	Stipulation ¹
Criteria adopted	1. Students 2. Program objectives 3. Graduate attributes 4. Curriculum 5. Faculty 6. Facilities 7. Support and funding 8. Continuous improvement The GCREAS model must be simple and oriented to results, but without overlooking resources and teaching methodology aspects.
STANDARDS BY CRITERION	
1. Students	Accredited programs must have functional policies and procedures that deal with quality, admission, counseling, promotion and graduation of students. There must be documented processes and policies for attract of students having the required abilities for achieving educational objectives. It must be an evaluation of students advance and level of achievement against the objectives for each program. Admission involving advanced standing, prior studies, transfer credits and/or exchange studies must be well regulated. Program must have enough resources and well organized procedures to assess and support students. <ul style="list-style-type: none"> - Academic programs instead of accredited programs - The program must also have enforced procedures to assure that all students meet all program requirements

¹ Adjustments, additions or other commentary by the Working Party on Standards are presented in red letters.

	for graduation
2. Program objectives	<p>The program must establish specific learning and educational objectives that concretize well defined contents of knowledge and abilities that will be described in criterion #3 of the model.</p> <p>The learning and educational objectives have been established based on the different requirements of the interest groups within the institution. They must be disclosed widely on and off campus and their performance must be checked.</p> <p>Each program must have in place:</p> <ul style="list-style-type: none"> - published educational objectives that are consistent with the mission of the institution. - a process that periodically documents and demonstrates that the objectives are based on the needs of the program's various constituencies - an assessment and evaluation process that periodically documents and demonstrates the degree to which these objectives are attained.
3. Graduate attributes	<p>The institution must demonstrate that the graduates of a program possess the attributes under the following headings:</p> <ul style="list-style-type: none"> – Demonstrated competence in university level mathematics, natural sciences, engineering fundamentals, and specialized engineering knowledge. – An ability to conduct investigations of complex problems by methods that include appropriate experiments, analysis and interpretation of data, and synthesis of information in order to reach valid conclusions. – An ability to design systems, components or processes that meet specified needs with appropriate attention to health and safety risks, applicable standards, economic, environmental, cultural and societal considerations. – An ability to work effectively as a member and leader in teams, preferably in a multi-disciplinary setting. – An ability to communicate complex engineering concepts. Such abilities include reading, writing, speaking and listening, and the ability to comprehend and write effective reports and

	<p>design documentation, and to give and effectively respond to clear instructions as well as basic competences for transnational communication.</p> <ul style="list-style-type: none"> - An ability to use appropriate knowledge and skills to identify, formulate, analyze, and solve complex engineering problems. - An understanding of impact of engineering on society and the environment: Such abilities include an understanding of the interactions that engineering has with the economic, social, health, safety, legal, and cultural aspects of society; and the concepts of sustainable design and development. - An ability to identify and to address their own educational needs in a changing world, sufficiently to maintain their competence while being involved in a continuous learning process. - An ability to appropriately incorporate economics and business practices including project, risk and change management into the practice of engineering. <p>The program will prove that these objectives are achieved. Once they have been reached, the program must prove the existence of a well established continuous improvement plan.</p> <p>There must be a regular efficiency evaluation for teaching learning processes.</p> <p style="text-align: center;">- CEAB's standards are adopted</p>
<p>4. Curriculum</p>	<p>The curriculum contents are designed to assure a foundation in mathematics and natural sciences, a broad preparation in engineering sciences and engineering design, and an exposure to non-technical subjects that supplement the technical aspects of the curriculum.</p> <p>The syllabus for each subject must clearly indicate how each subject is positioned within the curriculum, and must also indicate the educational content and methods and the goals to be achieved, as well as the coordination of every subject and the rest of the program ones.</p> <p>1. <u>Approach and methodologies for quantifying curriculum content</u></p>

1.1 Accreditation units (AU) are defined on an hourly basis. It corresponds to the actual contact time between the student and the faculty members, or designated alternates, responsible for delivering the program, according to the following:

- one hour of lecture (corresponding to 50 minutes of activity) = 1 AU
- one hour of laboratory or scheduled tutorial = 0.5 AU

This definition is applicable to most lectures and periods of laboratory or tutorial work.

Classes of other than the nominal 50-minute duration are treated proportionally. In assessing the time assigned to determine the AU of various components of the curriculum, the actual instruction time exclusive of final examinations should be used.

1.2 For an activity for which contact hours do not properly describe the extent of the work involved, such as significant design or research projects, curriculum delivered through the use of problem-based learning, or similar work officially recognized by the institution as a degree requirement, an equivalent measure in accreditation units, consistent with the above definition, should be used by the institution.

1.3 One method for determining an equivalent measure in AU is a calculation on a proportionality basis. This method relies on the use of a unit of academic credit defined by the institution to measure curriculum content. Specifically, a factor, K, is defined as the sum of AU for all common core and compulsory courses for which the computation was carried out on an hourly basis, divided by the sum of all units defined by the institution for the same courses. Then, for each course not accounted for on an hourly basis, the number of AU is obtained by multiplying the units defined by the institution for that course by K.

Σ AU for all common core and compulsory courses for which the computation was carried out on an hourly basis

K =

Σ units defined by the institution for the same courses

1.4. The Accreditation Board can give consideration to departures from these approaches and methodologies in any case in which it receives convincing documentation that well-considered innovation in engineering education is in progress.

2. Minimum curriculum components

An engineering program must include at least the minimum of each of the curriculum components specified below. The entire program must include a minimum of 1,950 AU

- Mathematics: Minimum 195 AU
- Natural sciences: Minimum 195 AU
- Mathematics and natural sciences combined: Minimum 420 AU
- Engineering science: Minimum 225 AU
- Engineering design: Minimum 225 AU
- Engineering science and engineering design combined: Minimum 900 AU
- Complementary studies: Minimum 225 AU
- Laboratory experience and safety procedures instruction

3. A minimum of 420 AU of a combination of mathematics and natural sciences

Within this combination, each of mathematics and natural sciences must not be less than 195 AU.

3.1. A minimum of 195 AU in mathematics are required. Mathematics is expected to include appropriate elements of linear algebra, differential and integral calculus, differential equations, probability, statistics, numerical analysis, and discrete mathematics.

3.2. A minimum of 195 AU in natural sciences are required. The natural sciences component of the curriculum must include elements of physics and chemistry; elements of life sciences and earth sciences may also be included in this category. These subjects are intended to impart an understanding of natural phenomena and relationships through the use of analytical

and/or experimental techniques.

4. A minimum of 900 AU of a combination of engineering science and engineering design

Within this combination, each of engineering science and engineering design must not be less than 225 AU.

4.1. A minimum of 225 AU in engineering science are required. Engineering science subjects involve the application of mathematics and natural science to practical problems. They may involve the development of mathematical or numerical techniques, modeling, simulation, and experimental procedures. Such subjects include, among others, the applied aspects of strength of materials, fluid mechanics, thermodynamics, electrical and electronic circuits, soil mechanics, automatic control, aerodynamics, transport phenomena, and elements of materials science, geoscience, computer science, and environmental science.

4.2. In addition to program specific engineering science, the curriculum must include engineering science content that imparts an appreciation of the important elements of other engineering disciplines.

4.3. A minimum of 225 AU in engineering design are required. Engineering design integrates mathematics, natural sciences, engineering sciences, and complementary studies in order to develop elements, systems, and processes to meet specific needs. It is a creative, iterative, and open-ended process, subject to constraints which may be governed by standards or legislation to varying degrees depending upon the discipline.

These constraints may also relate to economic, health, safety, environmental, societal or other interdisciplinary factors.

4.4. The engineering curriculum must culminate in a significant design experience. The significant design experience is based on the knowledge and skills acquired in earlier work and it preferably gives students an involvement in team work and project management.

4.5. Appropriate content requiring the application of modern engineering tools must be included in the engineering sciences

and engineering design sciences components of the curriculum.

5. A minimum of 225 AU of complementary studies in humanities, social sciences, arts, management, engineering economics and to complement the technical content of the curriculum.

5.1. Some areas of study are essential in the education of an engineer. Accordingly, the curriculum must include studies in the following:

- a. Engineering economics
- b. The impact of technology on society
- c. Subject matter that deals with central issues, methodologies, and thought processes of the humanities and social sciences
- d. Oral and written communications
- e. Health and safety
- f. Professional ethics, equity and law
- g. Sustainable development and environmental stewardship

5.2. Language instruction may be included within complementary studies provided it is not taken to fulfil an admission requirement. Furthermore, curriculum content that principally imparts language skills can be counted toward the required AU of complementary studies but cannot be used to satisfy the requirements for subject that deals with central issues, and thought processes of the humanities.

6. The entire program must include a minimum of 1,950 accreditation units².

7. Appropriate laboratory experience must be an integral component of the engineering curriculum. Instruction in safety procedures must be contemplated.

8. The requirements for curriculum content be satisfied by all students, including those claiming advanced standing, credit for prior secondary-level studies, transfer credits, and/or credit for exchange studies.

- August: Proposal is shared with all the ISC for discussion in

	<p>each country.</p> <ul style="list-style-type: none"> - September: Final decision in Panama (after work of a Petit Comité formed by 2 delegates of each founding country)
5. Faculty	<p>The character of the educational experience is influenced strongly by the competence, tise, and outlook of the faculty. The faculty delivering the program must have the following characteristics:</p> <ul style="list-style-type: none"> - There must be sufficient faculty to cover, by experience and interest, all areas of the curriculum. - There must be a sufficient number of full-time and part-time faculty members to assure adequate levels of student-faculty interaction, student curricular counselling, and faculty participation in the development, control, and administration of the curriculum. - Faculty administrative and teaching duties should be appropriately balanced to allow for adequate participation in research, scholarly work, professional development activities, and industrial interaction. - Under no circumstances should a program be critically dependent on one individual. <p><u>Leadership</u></p> <p>The Dean of Engineering (or equivalent officer) and the head of an engineering program equivalent officer with overall responsibility each engineering program) are expected to provide effective leadership in engineering education and to have high standing in the engineering community. They are expected to be engineers licensed in the corresponding country.</p> <p><u>Expertise and competence of faculty</u></p> <p>Faculty delivering the engineering curriculum are expected to have a high level of expertise and competence, and will be judged by the following factors:</p> <ul style="list-style-type: none"> - The level of academic education of its members. - The diversity of their backgrounds, including the nature and scope of their non-academic experience.

	<ul style="list-style-type: none"> - Their ability to communicate effectively. - Their experience in teaching, research, and design practice. - Their level of scholarship as shown by scientific, engineering, and professional publications. - Their degree of participation in professional, scientific, engineering, and learned societies. - Their personal interest in the curriculum and program-related program extra-curricular activities. <p>To be legally authorized to practice engineering in their country.</p> <ul style="list-style-type: none"> - Check the use of the term. - Introduce “members” in the first bullet/. - Administrative and teaching duties of faculty members (bullet 3) - Introduce a note to explain the licensing issue “subject to....” both in the case of leadership and faculty. - Introduce something about the existence of evaluating and giving faculty members feedback about their effectiveness as teachers
6. Facilities	<p>Lecture rooms, laboratories, workshop classrooms, technical and computer resources, seminar rooms, libraries and other information resources, social spaces, restaurants, etc. must be appropriate for achieving the objectives and they also must provide a proper environment for learning.</p> <p>Programs must provide opportunities for students to learn the use of modern engineering tools.</p> <ul style="list-style-type: none"> - Text is adopted “as is”
7. Support & funding	<p>Institutional support, financial resources, and constructive leadership must be adequate to assure the quality, continuity of the program and achieve learning objectives.</p> <p>Resources must be sufficient to attract, retain, and provide for the continued professional development of a well-qualified faculty.</p> <p>Resources also must be sufficient to acquire, maintain, and operate facilities and equipment appropriate for the program.</p>

	<ul style="list-style-type: none"> - In addition, support personnel and institutional services must be adequate to meet program needs. - Text is adopted “as is”
8. Continuous improvement	<p>The program must provide a system that continuously improves the program in accordance with criteria. The necessary activities must be implemented.</p> <p>There must be in place a form of communication channel between the educational institution and the industry, especially so that the industry could give feedback to the faculty concerning the relevance of the curriculum content to the global market place.</p> <p>Feedback will be obtained from students, graduates, employers, professional associations and other involved groups or institutions. Self evaluation results will be also used as feedback information.</p> <ul style="list-style-type: none"> - Be consistent with the use of the word “faculty”. - Use “institution”
MEANS OF VERIFICATION BY STANDARD	
	<ul style="list-style-type: none"> - The working party did not deliberate on the issue

Regulations

Based on the analysis of recommendations by the *Base Study*, the following general regulations and code of conduct are adopted.

Item	Stipulation ³
1. Main business	<p>The system that will be the result from this project will be a voluntary and engineering specialized accreditation system.</p> <p>It will be focused in bachelor degree program accreditation. Its range can be broadened later to affect technical degrees.</p> <ul style="list-style-type: none"> - Eventually the system may extend to cover technical careers associated with engineering as well as engineering graduate studies.
2. Conflict of interests	<p>Specific and well defined policies must be established for defining and handling conflict of interest situations.</p> <p>A possible trend for conflict of interest policies can be summarized as follows:</p> <p>GCREAS do a conflict of interest check with each person related with accreditation process.</p> <p>All individuals representing GCREAS must sign a conflict of interest and confidentiality statement indicating that they have read and understand the corresponding policies.</p> <p>Individuals must absent themselves from any portion of a GCREAS meeting in which discussions or decisions occur for which they have a real or perceived conflict of interest. Real or perceived conflicts may occur if there is a close, active association with a program or institution; A financial or personal interest; or any reason that the individual cannot render an unbiased decision.</p> <ul style="list-style-type: none"> - Policy will stipulate the right of programs under evaluation to object to individual evaluators based on substantiated arguments. - Policy will define specific forms and procedures to screen evaluator candidates for possible conflicts of interest. - Candidates' family relations, work relations or otherwise previous associations will be included as possible sources of conflict of interest.
3. Confidentiality	<p>Specific and well defined policies must be established for handling as confidential all the information related to accreditation processes and</p>

	<p>institutions..</p> <p>A possible trend for confidentiality policies can be summarized as follows:</p> <p>“No information relative to accreditation emitting from or received by GREAS is to be transmitted or revealed by the evaluators, authorities, staff or any other individual or organization, except as specifically permitted”.</p> <p>The following confidentiality guidelines can be established:</p> <ul style="list-style-type: none"> - All individuals representing GREAS must sign a conflict of interest and confidentiality statement indicating that they have read and understand the corresponding policies. - Information supplied by the institution is for the confidential use of GREAS and its agents, and will not be disclosed without the specific written authorization of the institution concerned. - The comments contained in the draft and final statements from GREAS, including cited strengths and observations, should never be made public, even if paraphrased. - Names of GREAS evaluators, team chairs, and observers who visited campus should never be made public. <p style="text-align: center;">- Text is adopted “as is”</p>
<p>4. Flexibility and replicability</p>	<p>Specific and well defined policies must be established for assuring flexibility and replicability for the operation of the accreditation body as well as programs innovation and continuous improvement.</p> <p>Flexibility and replicability policies for GREAS can be defined as follows:</p> <p>“Accrediting body shall develop its procedures and criteria for evaluation obeying flexibility, simplicity and replicability principles. The models and procedures that shall be proposed must have a simple definition and they must be easy to implement. They shall be able to adapt to different conditions, while promoting innovation, continuous improvement, decision coherence and feedback consideration”.</p> <p><u>The definition of flexibility will include:</u></p> <ul style="list-style-type: none"> - The possibility that evaluation procedures be adapted to particular conditions in what concerns their form but never in terms of the underlying quality standards. - The possibility that complementary, qualitative measurements be included in evaluations, along the quantitative ones. - That programs being evaluated may enjoy instances of clarification, on factual matters, before the evaluation is over.

	<ul style="list-style-type: none"> - That programs being evaluated may have the right to appeal points of content in an evaluation final report. <p><u>The definition of <i>replicability</i> will include:</u></p> <ul style="list-style-type: none"> - That the system may be applicable to engineering careers in different countries. - The Working Party requested that Consultants better clarify their meaning in this section of the study. - The Working Party suggested to substitute a text essentially stating that GCREAS will develop procedures and criteria for engineering accreditation that are flexible, simple and replicable, that allow adaptation to different national conditions and permits innovation, continual improvement and coherence of decisions.
<p>5. Evaluation team</p>	<p>An evaluation team will be formed by three members, one of them being the Team Chair. The members will come from both academic and professional sectors, one of them must be an experienced professional. At least two of them must be specialized in the knowledge area of the evaluated program and the third member must have a similar or equivalent degree and must be familiar with evaluation methodologies.</p> <p>One of the members must come from the country in which the program is being carried out, while the rest shall come from Greater Caribbean Basin Region or other parts of the world as long as they are fluent in English or in the language of the country of the program.</p> <ul style="list-style-type: none"> - To the extent possible, the system will include in the evaluation teams: (i) one evaluator from within the region, but from outside the country of the program being evaluated;; (ii) one evaluator from the country of the program being evaluated, to provide adequate context; and (iii) one evaluator from outside the region. - To the extent possible, the evaluation team will include a secretary, to be charged with typing and transcription while the others concentrate on the evaluation itself.⁴ - It will be a requirement that the evaluators be competent in the language from the country of the program being evaluated.

Procedures

Based on the analysis of recommendations by the *Base Study*, the following evaluation procedure is adopted for the system.

Item	Stipulation ⁵
Evaluation procedure	<p>1. <u>Applicacion Presentation</u></p> <p>Programs seeking accreditation must submit a Request for Evaluation, in this application they express their interest in follow principles and procedure established by GCREAS. Application must include general information (including number of graduates and authorization for operation in the corresponding country) about the program and the institution. Program have had to participate in the GCREAS events regarding induction for self evaluation study preparation and use of the designed tools</p> <p>2. <u>Self evaluation report presentation</u></p> <p>Once the application has been accepted, GCREAS agrees with the program about the delivery date for the self evaluation report. Self evaluation report must be prepared based on the established guidelines and it must be delivered at least three months before the visit.</p> <p>3. <u>Evaluation team members nomination</u></p> <p>While the program conducts the self evaluation report, evaluation team will be formed, but only when the list of programs requesting for accreditation is known. The corresponding consultant committee delivers about the competences that are expected to be present in the team members and makes a recommendation to Accreditation Council. The recommendation is made based on reference terms and considering minimum criteria requested by accreditation system as well as the specific characteristics of the program. Based on the consultant committee recommendation as well as the approval condition for the application, Accreditation Council decides team designation.</p> <p>Evaluation team is composed by a Team Chair and other two members. They can come from academic, governmental, private or industry sectors and one of them must be a national from the country in which the program is located.</p>

The institution is allowed to present a replacing application for the evaluation team if it is properly justified.

4. Preliminary self evaluation report reviewing

Self evaluation report is preliminary reviewed by evaluation team. The reviewing is intended to check its completeness and to give the chance to evaluation team for, if it is needed, asking for additional information.

5. Evaluation visit preparation

Team chair of the team agrees aspects of preparation of the assessment visit with other members and program representatives. He proposes a date for the visit and a scheduling of activities. In this stage visit organization aspects regarding evaluation team, as well as requirements for meetings are coordinated.

6. Evaluation visit

Team chair will call the rest of the members for a meeting in the evening prior to the first day of the visit. The usual agenda includes presentation of visit scheduling, procedures, task assignment and discussion about self study report information and additional information presented by the program.

The visit will last three days. During the visit, the evaluation team examines information and documentation about courses, tasks and projects made by students, facilities and carries out a series of meetings and interviews with students, faculty and administrative staff in order to check if evaluation criteria are accomplished. Team members also corroborate aspects regarding self evaluation study, academic atmosphere and morale.

Before the end of the visit, evaluation team members meet with the dean or, preferably, with program authorities in order to show results from the visit (strengths and weaknesses, deficiencies, concern areas or any other aspect that could be considered of interest).

7. Visit report preparation

During the visit, the evaluation team starts the preparation of the visit report. In this report they detail the main findings observed in the visit and they raise possible improvement suggestions. The report is finished by team chair in coordination with the other members within the two weeks following the visit. Then it is sent to program

authorities in order to prevent mistakes or inaccuracies. Program authorities have the right to raise their comments about the contents of the report within the 7 days following the reception of the report.

Based on the feedback provided by the institution, evaluation team chair prepares final evaluation report that is sent to program authorities, to the established consulting council and GREAS accreditation council. This report does not include any type of accreditation recommendation.

8. Accreditation recommendation

Once the evaluation report has been finished, the corresponding GREAS consulting council will analyze it and express the accreditation recommendation that it is considered pertinent. If needed, consulting council can ask evaluation team members for advice or opinion.

9. Accreditation decision and communication

During an Accreditation Council Meeting, evaluation final report is presented by the national evaluator. Established consulting council participates in the meeting and it will present and justify its accreditation recommendation.

Based in all the documentation that has been compiled during the process, but mainly on visit report and consulting council recommendation, members from GREAS accreditation council will take accreditation decision, the decision is communicated to the program by writing containing accreditation decision and the corresponding justification. List of accredited programs are published and updated within GREAS website.

Accreditation is valid for six years. This period is subject to revision at any time during the crediting period.

If there are circumstances that affect the program feasibility, accreditation will be given during a shorter period and the program will be subject to an interim revision two years after. Factors that could imply this reduced accreditation include financial problems, uncertainty about the administrative organization, need for staff improvement, changes in courses contents, etc.

If the result of the interim review is positive, accreditation can be enlarged up to six years.

10. Monitoring

If, during accreditation period, GCREAS has reasons to consider that requirements for accreditation are no longer satisfied, the institution will be notified and it will be asked about the case. If the answer is not considered appropriate, GCREAS can begin a procedure for revoking the accreditation. This decision is motivated by the substantial changes in the conditions which made possible the accreditation.

11. Reconsideration or revisit (if applicable)

If a program receives a “not for accreditation” decision, then it is allowed to present an appeal a call for reconsideration or a call for new and immediate visit.

Application for reconsideration is only allowed when it is reasoned on the basis of inadequate decision caused by errors of fact or lack of conformity with GCREAS criteria, policies or procedures.

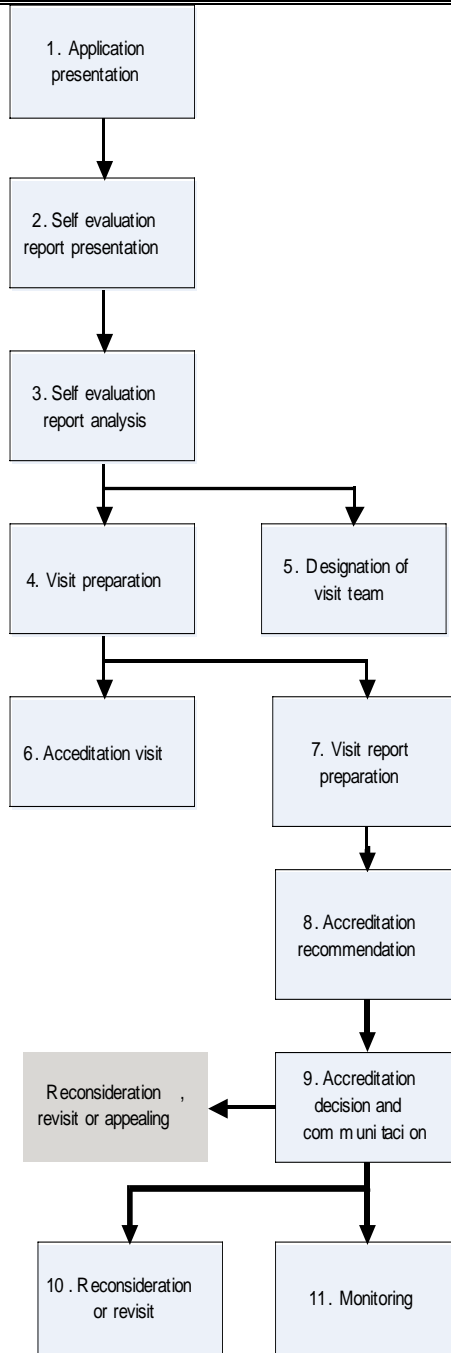
In case of a call for immediate visit, the substantive differences and corrective actions will be considered but they must be properly documented.

In any case, application must be raised to GCREAS Accreditation Council within the 15 days after the decision. GCREAS must analyze and answer within 30 days from the reception.

Informal evaluation or visit (if requested)

By request from an institution, GCREAS Accreditation Council will authorize an informal evaluation or visit to a non-accredited program. The main objective of such an action is to provide findings, comments and observations, as well as consulting functions, but in any case there are no accreditation recommendations at all. Informal visit or evaluation costs are covered by the institution that calls for it.

Proposed process chart



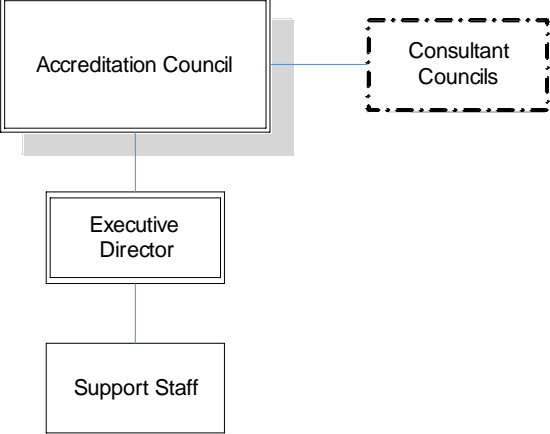
Duration
1 year approx .

- Text is adopted "as is"

Governance Model

Based on the analysis of recommendations by the *Base Study*, the following evaluation procedure is adopted for the system.

Item	Stipulation ⁶
1. Ownership	<p>The system that will be the result from this project must favor the participation of the different involved sectors (universities, professional associations, government, private sector, etc.).</p> <ul style="list-style-type: none"> - There is ample support for the notion that the Universities should not partake in the ownership of the system - In principle, professional a associations are the main institutions called to own the system. There exists, however, preoccupation for the political penetration and influence trafficking that associations may be subject to in some countries⁷ - There is ample agreement that the Government sanction is necessary for the system to work properly, but there also exists preoccupation about the Government's involvement in the system ownership due to the possibly negative influence of political agendas and conflicts in deliberations and decision making. - There is consensus that an inter-governmental agreement is required for the system to work properly - There is a generally recognized need for a thorough research of the legal and institutional restrictions in each country for the system to operate as conceived.
2. Governing structure	<p>The structure must be simple in the beginning, but should have the opportunity to grow if circumstances so require.</p> <p>The minimum structure must include Accreditation Council, Executive Director, support staff and Consulting committees in the areas of specialization</p> <p>The proposed organizational structure is shown below:</p>

	 <pre> graph TD AC[Accreditation Council] --- CC[Consultant Councils] AC --- ED[Executive Director] ED --- SS[Support Staff] </pre> <ul style="list-style-type: none"> - No objection was expressed to the governing structure expressed in the proposed organizational chart - There is support for the idea that representatives to the governing body of the system be elected by a college of representatives from the different owners the system in each country (Electoral College). - There is support for the idea that the Governing Body included a limited, pre-defined set of seats established on the basis of functional needs and regardless of the number of countries belonging to the system. (Functional representation rather than proportional representation). - There is support for the idea that the “electoral college” in each country select nominees for the limited set of seats in the Governing Body, and then the final election would take place in the general assembly of delegates from the member countries, convened every number of years previously agreed upon.
3. Functions	<p>There is no recommendation for this item in the Draft Base Study</p> <ul style="list-style-type: none"> - The Working Party did not deliberate on the issue - During plenary debates it was requested that a more detailed organizational analysis for the System should be presented, including a more precise description of the functions to be discharged by each instance in the proposed organizational chart. In the definitive version of the study the consultants will include the requested details
4. Incorporation of new members	<p>There is no recommendation for this item in the Draft Base Study</p>
5. Relations with other institutions	<p>Interchange and cooperation links with other systems must be established. Not only by cooperation links with WA signatories, but also by participating in networks like CANQATE, RIACES or INQAAHE, and by establishing mutual recognition accords with national agencies within</p>

Grater Caribbean Basin Region.

- The Working Party did not deliberate on the issue
- During plenary debates it was requested more specific details about the approach and experience of each of the systems studied concerning the role played by national authorities in transferring to professional instance the power to accredit and license engineers;

Financing mechanism

Based on the analysis of recommendations by the *Base Study*, the following stipulation for the system's funding mechanism were adopted

Item	Stipulation ⁸
Funding mechanism	<p>The funding sources for the system that is going to be implemented must be varied (fees, memberships, donations, other contributions) and with appropriate proportions to achieve sustainability.</p> <p>Regarding fees, it is suggested an initial \$1000 fee for administrative tasks, \$8000 for each program accreditation fee and \$1000 year monitoring fee.</p> <p>GCREAS system operating direct costs will correspond to the following items: evaluators remuneration, meal allowances, travel and lodging expenses.</p> <p>In most of the analyzed systems there is no remuneration for evaluators. Furthermore, all the systems that are WA signatories follow this trend.</p> <p>But in the proposed model, a \$1000 remuneration for every evaluator has been included. The Latin American professional context, in which there are no other incentives to do evaluation tasks, is the reason for this suggestion.</p> <p>Accreditation visit stage costs can be estimated in 18 days for evaluators. These can be broken down as follows: Three days per every specialist corresponding to the visit itself, and two additional days per specialist corresponding to preparation, travel and unforeseen issues/problems. They are multiplied by three evaluators.</p> <p>Another three days must be accounted for the team chair, corresponding to previous work and final report preparation.</p> <p>- More precise cost estimates for the System should be presented, including fixed operational costs and variable costs associated to the provision of services. Estimates should include total annual costs as well as the number of accreditations necessary and tariffs that need to be applied in order for the System to at least cover total costs (break-even point). The consultants will submit the complete analysis and their final conclusions as part of the definitive version of the Study, including a scenario in which more than one program evaluation may be done per visit by the evaluation team, and the possible impact of this scenario in the cost</p>

	<p>profile and break-even point;</p> <ul style="list-style-type: none">- On a request by the ISC, the consultants made preliminary calculations of the system's operating costs and break-even point, and presented them to the delegates. In preparation for the plenary deliberations on the matter of Financial Mechanism and future sustainability of GCREAS, Mr. Garth Kiddoe worked separately with the consultants in the charge of the <i>Base Study</i> and introduced the consultants' presentation of results to the delegates.- During the ensuing debate several observations were made about the underlying analysis. Specifically, total costs in the medium-term projections presented appeared underestimated. They did not include, for instance, the costs of meetings every year or two by the governing body of the system. The Canadian delegate present in the meeting expressed that, by experience, to the normal costs budgeted for a year a 30% must be added, to make projections more prudent.- However, and independently of such observations, the first estimates presented showed in a very conclusive way that, counting only on incomes from rendered services at the common current market Price, the number of actual accreditations needed for the system to break-even would be out of its realistic possibilities during the first phase of its existence. Consequently, the preliminary conclusion is that the system must count on with substantial cash contributions, beyond the expected incomes for services rendered, in order to cover minimal operating and become sustainable, at least during its consolidation phase.- During the plenary debate, the idea was raised that the country to which the headquarters of the system is awarded. At the end of the open sessions of the meeting, and speaking officially on behalf of the organization he heads, Eng. Arturo Pichardo, President of the CODIA, Dominican Republic, offered to provide office space in its headquarters of Santo Domingo for use, free of charge, by the GCREAS.
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