GREATER CARIBBEAN REGIONAL ACCREDITATION SYSTEM
(GCREAS)

Organic Documentation

October 2009
GREATER CARIBBEAN REGION ENGINEERING ACCREDITATION SYSTEM (GCREAS)

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CHARTER ACCORD OF THE GREATER CARIBBEAN REGION ENGINEERING ACCREDITATION SYSTEM

(GCREAS)

AMONGST US:
The Panamanian Society of Engineers and Architects, SPIA; the National Secretary for Science, Technology and Innovation of Panama, SENACYT; the National Council for Evaluation and Accreditation of Panamanian Universities, CONEAUPA; the Technological University of Panama, UTP; the Santa María la Antigua University of Panama, USM; the Professional Engineers Registration Board of Jamaica, PERB; the University Council of Jamaica, UCJ; the Jamaica Public Service Company, JPS; the University of Technology, Jamaica, UTech; the University of West Indies, Saint Augustine, Trinidad & Tobago, UWI; the College of Engineers, Architects and Land Surveyors of the Dominican Republic, CODIA; the State Secretary for Higher Education, Science & Technology, SEESCYT; the Dominican Association for Self-study and Accreditation, ADAAC; the Technological Institute of Santo Domingo, INTEC; the Autonomous University of Santo Domingo, UASD; The APEC University, UNAPEC, Dominican Republic; the Catholic University Madre y Maestra, PCUMM, Dominican Republic; and the Association of Herrera Industrial Enterprises in Dominican Republic, AEIH;

WHEREAS:
We understand that, as the frequency of Exchange among the countries of the Greater Caribbean and the mobility of professionals between these countries increase, the quality of the region’s professional engineers is no longer an exclusively local issue limited to each country, as it was in the past;

We understand that, in the global economy of the XXI century, the ability of countries in the Greater Caribbean to sell their products and attract investment capital will increasingly depend on their ability to demonstrate the quality of their engineering education programs and the competence and competitiveness of their engineering professionals;

We understand, as it was recognized in the Kingston Declaration, of March 2009, that a system of engineering accreditation especially designed for the countries of the Greater Caribbean will significantly contribute to the quality and development impact of the engineering education programs in the region.
WE HAVE AGREED:

1. To create the Greater Caribbean Region Engineering Accreditation System, GCREAS.

2. To approve the By-laws of GCREAS attached to the present Charter Accord;

3. To originally charter the GCREAS and establish its Headquarters in the city of Santo Domingo de Guzmán, Distrito Nacional, Dominican Republic, as in effect it does through the present act;

4. To create the Board of Directors of GCREAS, whose responsibilities are stipulated in the By-laws approved in the present act, and whose founding members are the following:

   [Institutions listed in the original]

5. Authorize the Board of Directors, to (i) develop, approve and implement a strategy for the implementation of GCREAS including approval of its operational budget; and (ii) create the Accreditation Council and the Executive Directorate of GCREAS, whose responsibilities and authority are stipulated in the By-Laws attached to the present Charter Accord.

6. Stipulate that any contradiction between the By-laws and the present Charter Accord would be solved in favor of the Charter Accords text.

Sign in agreement:
CHAPTER I: NATURE OF THE ORGANIZATION

Article 1. The Greater Caribbean Region Engineering Accreditation System (GCREAS), hereinafter also called the “Organization” or the “System”, is a private, international, not for profit entity, established by professional engineering associations, private business organizations, institutions of higher learning both public and private, national accreditation bodies and Government agencies in charge of higher learning in countries of the Greater Caribbean, who exert the collective property of the organization, in free, voluntary association, according to the Charter Accord.

Article 2. The organization is regional and multi-lingual in nature; so its name, and general documentation, including the present Bylaws, will be expressed in the several languages of the countries of the Greater Caribbean where member organizations exist (member countries). The organization adopts its English acrostic, GCREAS, as its official acronym.

CHAPTER II: PURPOSE AND DOMAIN

Article 3. GCREAS’s main mission is the quality assurance of engineering education in the countries of the Greater Caribbean through the accreditation of education programs in the several branches included in the Engineering profession. With this mission the System aims at promoting the international competence, competitiveness and mobility of graduates from the said programs entering the professional practice in the member countries, thus contributing to the regional public welfare.

Article 4. GCREAS will pursue its mission mainly through the development, promulgation and application of accreditation criteria uniform to all member countries, and through the promotion of a culture of quality in the Engineering programs of the higher learning institutions of the Greater Caribbean region. Accordingly, GCREAS will promote innovation and continuous improvement, and will facilitate the strategic planning necessary to these aims. GCREAS may enter into agreements and pursue all manner of activities, projects and programs within legal limits, that will further its mission.

Article 5. Participation of engineering education programs in GCREAS’s accreditation process will be voluntary and the System may in the future, widen its focus to include graduate level engineering programs and other technical education programs associated with the various engineering careers.
CHAPTER III: MEMBERSHIP

Article 6. The members of GCREAS, will comprise the entities that signed the Organization’s Charter Accord (founding members), plus all those professional engineering associations, private business organizations, institutions of higher learning, public or private, national accreditation bodies and Government agencies in charge of, or organically concerned with, higher learning in countries of the Greater Caribbean that have formally applied for membership to the Organization and have been officially so admitted, according to the procedure stipulated in the present By-laws.

Article 7. It is understood that all countries of the Central-American Isthmus, all the Caribbean Isles, and all those countries of the South-American Continent with Caribbean coasts, plus Bahamas, Guyana and Suriname, belong to the region of the Greater Caribbean.

Article 8. The entities in countries of the Greater Caribbean can apply for, and may initially acquire, once officially admitted, two different categories of GCREAS membership status; namely: (i) Associate Member; or (ii) Affiliate Member. Associate Members will be able to opt for status as Full Members by establishing in each country a National Committee of the System (NC) following the procedure stipulated in these By-laws.

CHAPTER IV: RIGHTS AND OBLIGATIONS

Article 9. Associate Members have the right to apply and, subject to the Organization’s norms, procedures and criteria, participate in the process of evaluation of the quality and accreditation of engineering education programs, offered within the Greater Caribbean region, and are entitled to receive all the training and information, involved in the said process subject to payment of all stipulated contributions and fees. In addition, Associate Members will have the right to organize a NC in each of its countries, and submit their candidacy to be accepted as full members of GCREAS.

Article 10. Affiliate Members have the right to receive all the training and information involved in the GCREAS process of quality evaluation and accreditation, subject to payment of the fees stipulated for such services. Affiliate Members may provide financial contributions to the Agency, on a voluntary basis, and they will be entitled to participate in the NC, as it may exist in any particular country, with the right to speak but not to vote.

Article 11. Beside the right to apply and, subject to the Organization’s norms, procedures and criteria, participate in the process of evaluation of the quality
and accreditation of engineering education programs offered within the Greater Caribbean Region, and to receive all the training and information involved in the said process, full members have the right to influence the definition of strategies, policies, codes of conduct and procedures of the Organization, through their participation and vote in the NC of each country. This includes the establishment of evaluation criteria and standards, as recommended by the GCREAS Accreditation Council, as well as other strategic decisions, by means of designating, through their NC, delegates to the GCREAS bodies of authority, according to the procedure stipulated in these By-laws.

Article 12. All members of the Organization, except for the Affiliate Members, are under the obligation to provide the contribution of funds necessary for the System’s maintenance and operation, as established by the Organization’s governing body, and to abide by the policies and code of conduct stipulated by GCREAS concerning its functions. All members, including Affiliate Members, are also expected to contribute additionally in kind, and on a voluntary basis to the sustenance, mission and institutional strengthening of the Organization in the way they deem appropriate for their own mission and means.

CHAPTER V: ADMISSION AND SEPARATION

Article 13. Those entities willing to be associated with GCREAS will express such interest through a formal letter addressed to the System’s designated authorities, accompanied by the documentation accrediting them as organizations of the type and jurisdiction stipulated in articles 6 and 7 of these By-laws.

Article 14. The criteria which the GCREAS authorities may take into consideration to determine, at their discretion, the eligibility of an entity applying for membership will include: (i) compliance with national norms to exist and operate as a legal organization in its branch of activity; (ii) active involvement in the dissemination of engineering knowledge; (iii) demonstrated accreditation by the national competent authority; and iv) substantial membership of engineering graduates in the ranks of the organization.

Article 15. Once the nature and characteristics of the applying entity has been reviewed, and its eligibility and ability to contribute to the mission of the Organization has been established, the designated GCREAS authority will draft, and if approved, sign an official admission resolution, and will communicate it to the said entity, along with its rights and obligations in the Organization. Where the application is not approved, the decision will also be communicated to the entity. The decision to admit or not will be reached by majority vote within the System’s designated authority and will be effective immediately. Yet, the decision will be subject to ratification by the supreme authority of the System in its next meeting.
Article 16. The NC organized in each of the countries by the member entities of the GCREAS will establish their own Bylaws and internal procedures. The NC will have to be recognized by GCREAS as official speaker organization, of all member entities in the country, according to the stipulation of present By-laws.

Article 17. The NC will be formed by entities of the type stipulated in article 6 of the present By-laws and, in order to be officially recognized as such should count among its members, at minimum: (i) a professional engineering association; (ii) an institution of higher learning, public or private; and (iii) a Government agency in charge of Higher Education in the country.

Article 18. Once an NC has been established and admitted to GCREAS, its members will automatically acquire the status of full members, with all the rights and obligations of the System’s founding members.

Article 19. Providing six-month notice is given to the GCREAS authorities, any entity may withdraw from GCREAS effective at the end of the fiscal year for the Organization. Upon withdrawal, the entity shall forfeit all equity it has contributed to the Organization, if any, and shall cease to enjoy all rights and privileges under the System. The entity shall continue to be liable for all of its financial obligations to GCREAS until the effective date of withdrawal.

Article 20. Whenever an entity fails to meet its responsibilities to GCREAS, including the economic obligations, ordinary or extraordinary this failure shall, upon the official notification by the System’s authorities of such breach, constitute a request by the entity to withdraw from the System. The NC to which a withdrawing or separated entity belongs, shall endeavor to replace it with another that allows the NC to maintain its representation, as it may be appropriate.

CHAPTER VI: DOMICILE

Article 21. The Organization is originally chartered and headquartered in the city of Santo Domingo de Guzmán, Distrito Nacional, Dominican Republic. Whenever necessary, the Organization will also be chartered and legally recognized in the other countries with member entities of the System that have constituted their NC admitted by GCREAS. The System’s governing body will session on a rotating basis, in all GCREAS member countries.
CHAPTER VII: ORGANIZATIONAL AND GOVERNING STRUCTURE

Article 22. The following bodies and entities of authority will constitute GCREAS’ organizational structure: a Board of Directors, an Accreditation Council, Consulting Committees and an Executive Directorate. With the exception of the Executive Director and the staff hired under his/her supervision, all officers and members in the different organizational bodies will operate as voluntary personnel.

Article 23. The Board of Directors (BD) is the highest authority of the Organization. It is the organ through which the System’s proprietors exert control over deliberations and decisions defining and affecting the system over the long run in matters of institutional strategy, policies & code of conduct, and rules of procedures. Its members will be elected by the NC of each member country, on the basis of two representatives per country, up to a maximum of twelve members (six NCs). Upon the admission of a seventh NC to the System, the number of representatives per country on the BD will be reduced to one. For each principal member designated to the BD by the country (principal director) the NC will also elect a substitute member (alternate director), in case of absence of the main Director. The BD will elect among its members a Chairperson, a Vice-chairperson, and a Treasurer.

Article 24. Members of the BD (Directors) will regularly occupy their posts for a period of four to five years each, and may be elected to a single additional period. Nonetheless, the actual opportunity to replace members will be dictated by a rotation mechanism, to be established by the BD itself, by virtue of which there will always be on the Board, members carrying the institutional memory of the System and acting as a bridge between the new and the old generations of directors. By a written communication to all members of the BD, a NC can withdraw any of its representatives on the Board, in the event that one or more of the requisites to belong to the body stipulated in the present article no longer hold. On each replacement cycle or opportunity, the NCs of the respective countries will elect their delegation ensuring that the designees comply with the following requisites:

(i) To be a citizen of any of the countries in the Greater Caribbean region;
(ii) To be a representative of one of the member entities of the System;
(iii) To be a person of known moral solvency and rectitude, respected and recognized by his/her peers;
(iv) To be the holder of an accredited degree of higher education; and
(v) To be a registered/licensed professional with academic experience of at least ten years.
Article 25. The BDs will convene in a different member country every two years, or more frequently according to needs assessed by the Directors. The following are responsibilities of the BD:

(i) Develop and approve its own Internal By-laws;
(ii) Review and keep updated the text of the Charter Accord and the present By-laws as it may be necessary to perfect the institutional mission and preserve GCREAS’s operation;
(iii) Define the Organization’s vision and adopt the medium and long-term institutional strategies necessary to realize the vision;
(iv) Establish, review and keep updated the policies & code of conduct of the System;
(v) Establish, review and keep updated the procedures of the System;
(vi) Establish, review and keep updated the criteria and standards of the System for the accreditation of engineering education programs;
(vii) Ratify the admission of the new members and NC in the member countries of the System;
(viii) Celebrate agreements of mutual recognition or interest with agencies or similar national or international institutions;
(ix) Approve the organizational or procedural proposals, and the plans, projects, budgets and reports submitted for its consideration by the Accreditation Council and the Executive Direction of the GCREAS;
(x) Select and designate the members of the Accreditation Council from among the candidates nominated by the NCs.

Article 26. The Accreditation Council (AC) constitutes the technical authority of the Organization and supreme organ of the System in what concerns the evaluation and accreditation of engineering education programs. It is made up of 6 members, which are elected by the BD from within a set of nominees presented by the NC of each country. Although it is established by the BD and must abide by the policies, code of conduct and rules of procedure established by the BD, the AC is a professional specialized body, whose actions and decisions are autonomous and whose authority on matters of accreditation is independent. The AC shall elect from within its membership a Chairperson, a Vice-chairperson and a Secretary.

Article 27. Members of the AC (Accrediting Councils) will regularly occupy their posts for a period of three to four years each, and may be elected to a single additional period. Nonetheless, the actual opportunity to replace members will be dictated by a rotation mechanism, to be established by the AC itself, by virtue of which there will always be on the Council, members carrying the institutional memory of the System and acting as a bridge between the new and the old generations of Accreditation Council members. On each replacement cycle, the NCs of the countries will nominate one to three
candidates for the AC, ensuring that the nominees comply with the following requisites:

(i) To be a citizen of any of the countries in the Greater Caribbean region;

(ii) To be a person of known moral solvency and rectitude, respected and recognized for his/her professional or academic leadership;

(iii) To be the holder of an accredited degree of higher education in any branch of Engineering;

(iv) To possess knowledge of evaluation and accreditation systems for engineering programs; and

(v) To possess professional or academic experience in engineering of at least ten years.

Article 28. Not eligible as candidates for member of the AC are those individuals with one of the following incompatibilities: (i) to own, be shareholder or director of an institution of higher education, or to work as President, Rector, Vice-Rector, Dean, School Director, High University Council member or a member of the Board of Directors of an institution of higher learning which is member of GCREAS; ii) to hold the public elected offices, or to be a functionary designated the President of the Country or elected for the legislative or judiciary branches of government in a country member of the GCREAS.

Article 29. The AC’s plenum will convene at the GCREAS headquarters once a year or when the accreditation cycle would require, according to the needs assessed by the AC. The following are responsibilities of the AC:

(i) Develop and approve its own Internal By-laws;

(ii) Oversee a strict compliance with the policies, procedures, criteria and standards for the evaluation and accreditation of engineering education programs as established by GCREAS;

(iii) Recommend to the BD the establishment or updating of the procedures, criteria and standards for the evaluation and accreditation of engineering education programs by GCREAS;

(iv) Recommend to the BD the establishment or updating of the evaluation instruments to be used in the accreditation of engineering education programs by GCREAS;

(v) Make the decision to evaluate or not programs soliciting GCREAS accreditation;

(vi) Review the self-evaluation reports presented by the programs seeking accreditation by GCREAS;

(vii) Designate the peer evaluator teams for the evaluation processes;
Designate the members of the Consulting Committees that will operate in support of the work of the AC;

Review and make decisions on the reports and findings of the Consulting Committees;

Decide on the accreditation of the programs evaluated by the GCREAS;

Approve organizational and procedural proposals, as well as plans, projects, budgets and reports to be submitted to the BD;

Decide on the provisional admission of new associate members or NC, subject to final ratification by the BD, according to what is stipulated in the present By-laws.

Article 30. The Consulting Committees (CC) are technical bodies that will assist the AC on the Council’s deliberations concerning the different specialty areas of Engineering. The CC will be formed by experts in the several branches of Engineering, chosen by the AC to express professional opinions on the subject matters submitted for their consideration.

Article 31. The following are the responsibilities of each CC:

(i) At the request of the AC, to technically advise the Council during the decision-making process for accrediting an engineering program;

(ii) At the request of the AC, to provide specialized opinions on the selection of peer-evaluators;

(iii) At the request of the AC, to provide specialized opinions on matters such as the approval of criteria, instruments and procedures for evaluation of engineering programs.

Article 32. The Executive Directorate (ED) is the administrative body of the System, headed by an Executive Director and a minimal support personnel, in charge of keeping the day-to-day operational agenda of the Organization and sustaining its technical and institutional memory and documentation. The ED will have its offices at GCREAS headquarters and shall operate directly under the authority of the BD.

Article 33. The following are responsibilities of the ED

(i) Ensure quality and effectiveness in achieving GCREAS’s mission;

(ii) Perform the administration of the System and execute the decisions of the AC and the BD;

(iii) Act as the System’s technical secretariat during the AC and BD meetings.
(iv) Coordinate and supervise the work of the support personnel in the day-to-day business of the System;

(v) Prepare and propose GCREAS’s operational budget, for review and approval by the BD, as well as ensure correct financial execution.

CHAPTER VIII: AMENDMENTS

Article 34. Changes to the present By-laws may be submitted for consideration to the meetings of the BD by its Chairman, or through motions with the support of two or more Directors. Proposal for changes, sufficiently grounded, will be circulated with the agenda of the following BD meeting with at least 30 working days notice to allow for the adequate information of all GCREAS members. Approval of any change to the present By-laws will require at least two-third majority of Directors.

CHAPTER IX: DISSOLUTION

Article 35. GCREAS is established for an unlimited period of time. It may be dissolved according to the procedures stipulated in the laws of the countries where it was legally chartered and registered.
# Governance Model

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<tr>
<th>Item</th>
<th>Stipulation</th>
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<tr>
<td>1. Ownership</td>
<td>GCREAS is founded by representatives from the several stakeholder sectors involved in engineering accreditation in the Greater Caribbean, including the engineering profession, academia, governments, private employers and national accrediting agencies, who are the system’s owners. Consequently, GCREAS governance will be collectively and democratically exerted by all organizations representing these sectors that have been legally accepted within the system.</td>
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<tr>
<td>2. Governing structure</td>
<td>GCREAS’ structure will be simple in the beginning, and could get more complex in the future depending on requirements. A governing body will be established, elected under the criterion of representation, to be in charge of heading and representing the GCREAS, as well as establishing its rules, policies and operational strategies. Separately, a technical body will be established, elected under the criterion on professionalism, to be in charge of accreditation. The governing body will be formed by two delegates from each of the countries dully admitted to the system, up to a limit after which a formula for reduction of representatives will be implemented in order to maintain the governing body within reasonable limits of complexity and costs. The technical body will be formed by 6 members, engineers prominent in their fields, with professional or academic careers, and elected on the basis of their professional merits from within a set of candidates nominated by each member country. Accordingly, the GCREAS organizational and governing structure will include: (i) a Board of Directors; (ii) an Accreditation Council; (iii) Consulting Committees; y (iv) an Executive Directorate in charge of a minimal administrative staff. The hierarchical and functional relations between the described bodies will be established according to the following organizational chart:</td>
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![Organizational Chart](chart.png)
Members of GCREAS’ Board of Directors will be elected collectively by the representatives of the owner organizations in each country that has been dully admitted to the system.

The Accreditation Council will be formed by the fixed, limited number of members above stipulated, which divide among themselves a predetermined number of positions within the body, which will be based on functional needs, without regard for the number of member countries in the system.

The system’s proprietary organizations will nominate candidates to the Accreditation Council, whose selection will be decided by the Board of Directors plenum, which will convene with a predetermined frequency.

The GCREAS’ Executive Directorate will be established in the member country where the system will be domiciled, and the meetings of the Board of Directors and the Accreditation Council will take place in all member countries on a rotating basis.

3. Functions

Of the Board of Directors

(i) Develop and approve its own Internal By-laws;

(ii) Review and keep updated the text of the Charter Accord and the present By-laws as it may be necessary to perfect the institutional mission and preserve GCREAS’s operation;

(iii) Define the Organization’s vision and adopt the medium and long-term institutional strategies necessary to realize the vision;

(iv) Establish, review and keep updated the policies & code of conduct of the System;

(v) Establish, review and keep updated the procedures of the System;

(vi) Establish, review and keep updated the criteria and standards of the System for the accreditation of engineering education programs;

(vii) Ratify the admission of the new members and NC in the member countries of the System;

(viii) Celebrate agreements of mutual recognition or interest with agencies or similar national or international institutions;

(ix) Approve the organizational or procedural proposals, and the plans, projects, budgets and reports submitted for its consideration by the Accreditation Council and the Executive Direction of the GCREAS;

(x) Select and designate the members of the Accreditation Council from among the candidates nominated by the NSCs.
### Of the Accreditation Council

1. Develop and approve its own *Internal By-laws*;
2. Oversee a strict compliance with the policies, procedures, criteria and standards for the evaluation and accreditation of engineering education programs as established by GCREAS;
3. Recommend to the BD the establishment or updating of the procedures, criteria and standards for the evaluation and accreditation of engineering education programs by GCREAS;
4. Recommend to the BD the establishment or updating of the evaluation instruments to be used in the accreditation of engineering education programs by GCREAS;
5. Make the decision to evaluate or not programs soliciting GCREAS accreditation;
6. Review the self-evaluation reports presented by the programs seeking accreditation by GCREAS;
7. Designate the peer evaluator teams for the evaluation processes;
8. Designate the members of the Consulting Committees that will operate in support of the work of the AC;
9. Review and make decisions on the reports and findings of the Consulting Committees;
10. Decide on the accreditation of the programs evaluated by the GCREAS;
11. Approve organizational and procedural proposals, as well as plans, projects, budgets and reports to be submitted to the BD;
12. Decide on the provisional admission of new *associate members* or NC, subject to final ratification by the BD, according to what is stipulated in the present By-laws.

### Of the Consulting Committees

1. At the request of the AC, to technically advise the Council during the decision-making process for accrediting an engineering program;
2. At the request of the AC, to provide specialized opinions on the selection of peer-evaluators;
3. At the request of the AC, to provide specialized opinions on matters such as the approval of criteria, instruments and procedures for evaluation of engineering programs.

### Of the Executive Directorate

1. Ensure quality and effectiveness in achieving GCREAS’s mission;
2. Perform the administration of the System and execute the decisions of the AC and the BD;
(iii) Act as the System’s technical secretariat during the AC and BD meetings;
(iv) Coordinate and supervise the work of the support personnel in the day-to-day business of the System;
(v) Prepare and propose GCREAS’s operational budget, for review and approval by the BD, as well as ensure correct financial execution.

<table>
<thead>
<tr>
<th>4. Incorporation of new members</th>
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<td>Those entities willing to be associated with GCREAS will express such interest through a formal letter addressed to the System’s designated authorities, accompanied by the documentation accrediting them as organizations of the type and jurisdiction stipulated in articles 6 and 7 of these By-laws.</td>
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<td>The criteria which the GCREAS authorities may take into consideration to determine, at their discretion, the eligibility of an entity applying for membership will include: (i) compliance with national norms to exist and operate as a legal organization in its branch of activity; (ii) active involvement in the dissemination of engineering knowledge; (iii) demonstrated accreditation by the national competent authority; and iv) substantial membership of engineering graduates in the ranks of the organization.</td>
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<td>Once the nature and characteristics of the applying entity has been reviewed, and its eligibility and ability to contribute to the mission of the Organization has been established, the designated GCREAS authority will draft, and if approved, sign an official admission resolution, and will communicate it to the said entity, along with its rights and obligations in the Organization. Where the application is not approved, the decision will also be communicated to the entity. The decision to admit or not will be reached by majority vote within the System’s designated authority and will be effective immediately. Yet, the decision will be subject to ratification by the supreme authority of the System in its next meeting.</td>
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<td>The NC organized in each of the countries by the member entities of the GCREAS will establish their own Bylaws and internal procedures. The NSC will have to be recognized by GCREAS as official speaker organization, of all member entities in the country, according to the stipulation of present By-laws.</td>
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<td>The NC will be formed by entities of the type stipulated in article 6 of the present By-laws and, in order to be officially recognized as such should count among its members, at minimum: (i) a professional engineering association; (ii) an institution of higher learning, public or private; and (iii) a Government agency in charge of Higher Education in the country.</td>
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<td>Once an NC has been established and admitted to GCREAS, its members will automatically acquire the status of full members, with all the rights and obligations of the System’s founding members.</td>
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- Providing six-month notice is given to the GCREAS authorities, any entity may withdraw from GCREAS effective at the end of the fiscal year for the Organization. Upon withdrawal, the entity shall forfeit all equity it has contributed to the Organization, if any, and shall cease to enjoy all rights and privileges under the System. The entity shall continue to be liable for all of its financial obligations to GCREAS until the effective date of withdrawal.

- Whenever an entity fails to meet its responsibilities to GCREAS, including the economic obligations, ordinary or extraordinary this failure shall, upon the official notification by the System’s authorities of such breach, constitute a request by the entity to withdraw from the System. The NC to which a withdrawing or separated entity belongs, shall endeavor to replace it with another that allows the NC to maintain its representation, as it may be appropriate.

| 5. Relations with other institutions | GCREAS will develop relations with other similar systems, primarily through cooperation with agencies members of the Washington Accord, participating in networks such as CANQATE, RIACES and INQAAHE, and developing mutual recognition agreements on accreditation with national and international agencies in the Greater Caribbean.

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 Greater Caribbean Basin Region. |
## Regulations

<table>
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<tr>
<th>Item</th>
<th>Stipulation</th>
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<tr>
<td><strong>1. Main business</strong></td>
<td>The system will specialize in the accreditation of Academic Programs of Engineering, a process that will be voluntary in nature. Initially it will focus on accreditation of engineering programs at the professional level (bachelor degree). Its range can be broadened later to include technical degrees associated with the field of engineering, as well as graduate studies in engineering.</td>
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<tr>
<td><strong>2. Conflict of interests</strong></td>
<td>The GCREAS policies for handling possible conflicts of interest are the following: GCREAS will always do a conflict of interest check with each person related with accreditation process of an academic program. In this context, specific formats and procedures will be put in place to detect such possible conflicts of interest. All individuals representing GCREAS must sign a conflict of interest statement, indicating that they have read and understand the corresponding policies. Every academic program under evaluation will have the right to object in writing to the participation of particular individuals as evaluators, based on substantiated arguments demonstrating conflict of interest or the appearance thereof. Individuals with real or perceived conflict of interest in discussions or decisions, occurring during GCREAS' meetings must withdraw from such meetings. Real or perceived conflicts may occur if there is a close, active association of the concerned individual with an academic program or institution hosting an academic program under evaluation; a financial or personal interest in such program; or any reason impeding the individual to render unbiased opinions on the program under evaluation. An individual’s family relations, work relations or otherwise previous associations will be considered by GCREAS as possible sources of conflict of interest.</td>
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<tr>
<td><strong>3. Confidentiality</strong></td>
<td>GCREAS confidentiality policies are the following: No information relative to accreditation of an academic program by GCREAS is to be transmitted or revealed to third parties by the evaluators, authorities, staff or any other relevant individual or organization associated with the system, except as specifically allowed. The following confidentiality guidelines are established: - All individuals representing GCREAS must sign a confidentiality statement indicating that they have read and understand the</td>
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corresponding policies.
- Information supplied by the institution is for the confidential use of GCREAS and its agents, and will not be disclosed without the specific written authorization of the institution concerned.
- Recommendations to an academic program, or the comments contained in the draft and final statements from GCREAS to such academic program, including cited strengths and observations, should never be made public, even if paraphrased.
- Names of GCREAS evaluators, team chairs, and observers who visited campus will never be made public.
- In no case when an academic program has been accredited for less than the normal accreditation valid period, as stipulated by GCREAS, the valid period approved will be made public.

| 4. Flexibility and replicability | GCREAS policies concerning flexibility and replicability of the system are the following:

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, coherence of decisions and acceptance of feedback from external stakeholders.

Simplicity in the model promotes flexibility and replicability, to the extent that an excessively detailed procedure will make for difficult application in several different contexts, and will obstruct the development of innovative improvement options for the academic programs.

Some additional definition guidelines for these principles are the following:

**Flexibility**
- The evaluation procedures should be adaptable to particular conditions and different contexts in what concerns their form, but never in terms of the underlying quality standards.
- Complementary, qualitative measurements may be included in evaluations, along the quantitative ones.
- Programs being evaluated will be entitled to enjoy instances of clarification, on factual matters, before the evaluation is over.
- That programs being evaluated may have the right to provide observations on points of content in an evaluation final report.

**Replicability:**
- The system may be applicable to engineering programs in different countries.

| 5. Evaluation team | An evaluation team will have a minimum of three members, one of which will be the Team Chairperson.

In the cases that more than two academic programs are being
evaluated at the same time, an additional member will be included in the team per each additional academic program.

The members will come from both academic and professional sectors, one of them must be an experienced professional.

At least two of the team members 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.

GCREAS will endeavor to include in the evaluation teams at least: (i) an evaluator from a country of the Greater Caribbean region, different from the country of the academic program being evaluated, to provide appropriate context to the evaluation; (ii) an evaluator from the country of the academic program being evaluated; and (iii) an evaluator from outside the Greater Caribbean region.

The chairperson of the evaluation team should come from a country different than the country of the academic program

It will be a requirement that all evaluators in the team be competent in the language of the program being evaluated.
## Funding mechanism

<table>
<thead>
<tr>
<th>Item</th>
<th>Stipulation</th>
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</thead>
<tbody>
<tr>
<td>Funding mechanism</td>
<td>The funding sources for the system that is going to be implemented must be varied (accreditation fees, ordinary and extraordinary membership contributions, fees for additional services rendered, donations, other contributions, including special contributions from the headquarter country) and with appropriate proportions to achieve sustainability.</td>
</tr>
<tr>
<td></td>
<td>GCREAS’ Board of Directors will establish the tariffs to be assessed for the service of accreditation and any other service rendered, as well as ordinary and extraordinary contributions to be provided by members, as well as any other fee necessary to cover both the direct costs (those of the services rendered) and the indirect costs (those of maintenance of the organization, and its hired personnel, annual meetings, publications, etc.)</td>
</tr>
<tr>
<td></td>
<td>Direct costs of the accreditation process include per diem, travel expenditures, and lodging of evaluators. The effort during the phase of external evaluation (visit) is estimated at a minimum of 18 days/specialist of evaluators, based on 3 days/specialist during the visit, plus 2 additional days for transportation, preparation and unforeseen circumstances; these multiplied by the minimum number of team members which is 3. In the case of the team’s chairperson an additional 3 days/specialist is estimated as necessary for previous work and draft of the final report.</td>
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<td></td>
<td>Policies concerning the covering of direct costs are the following:</td>
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<tr>
<td></td>
<td>- The GCREAS model is adopted to defray direct costs through charging service fees or tariffs to the program that request accreditation.</td>
</tr>
<tr>
<td></td>
<td>- Part of these direct costs can also be defrayed by charging for accreditation training services.</td>
</tr>
<tr>
<td></td>
<td>Policies concerning the covering of indirect costs are the following:</td>
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<tr>
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<td>- Ordinary (annual) and extraordinary contributions will be assessed on members as a source to cover indirect costs</td>
</tr>
<tr>
<td></td>
<td>- Private employer sector organizations and national accreditation agencies will be exempt from mandatory contributions.</td>
</tr>
</tbody>
</table>
- It will be expected that Government institutions from the member countries will contribute, but also not a mandatory basis
- Contributions from universities will depend on its number of students. Programs, etc.
- GCREAS will actively publicize the services and benefits offered to clients
- GCREAS may organize conferences and seminars to help defray indirect costs
- The country hosting the system’s headquarters will defray the fixed costs associated with office space, equipment, expendable materiel and infrastructure service.
## Criteria and standards

<table>
<thead>
<tr>
<th>Item</th>
<th>Stipulation</th>
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</table>
| 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 for evaluation of Academic Programs of Engineering will be simple and oriented to results, but without overlooking resources and teaching methodology aspects.                                                                                                                                 |

### QUALITY STANDARDS BY CRITERION

1. **Students**

   - The academic program must have functional policies and procedures that deal with quality, admission, counseling, promotion and graduation of students.
   
   - It must have documented processes and policies to attract students with the required abilities for achieving the educational objectives.
   
   - It must supervise students’ progress and evaluate their level of achievement against the program objectives.
   
   - It must have functional policies and procedures for admission involving advanced standing, prior studies, transfer credits and/or exchange studies must be well regulated.
   
   - It must have enough resources and well-organized procedures to advise and support students.
   
   - It must also have enforceable procedures to assure that all students meet all program requirements for graduation
   
   - The higher education institution hosting the academic program must be legally constituted and accredited by the competent national authority

2. **Program objectives**

   - The academic program must establish specific learning and educational objectives that allow the knowledge contents and abilities described in criterion #3 of the model to materialize
   
   - The learning and educational objectives must 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.
Each program must have in place:

- 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.

<table>
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<tr>
<th>3. Graduate attributes</th>
<th><strong>Suggested by the Base Study</strong></th>
</tr>
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<tbody>
<tr>
<td>The institution must demonstrate that the graduates of a program possess the attributes under the following headings:</td>
<td></td>
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<tr>
<td>- Demonstrated competence in university level mathematics, natural sciences, engineering fundamentals, and specialized engineering knowledge.</td>
<td></td>
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<tr>
<td>- 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.</td>
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<tr>
<td>- 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.</td>
<td></td>
</tr>
<tr>
<td>- An ability to work effectively as a member and leader in teams, preferably in a multi-disciplinary setting.</td>
<td></td>
</tr>
<tr>
<td>- An ability to use appropriate knowledge and skills to identify, formulate, analyze, and solve complex engineering problems.</td>
<td></td>
</tr>
<tr>
<td>- An understanding of the professional responsibility and ethics towards society and the protection of the public interest.</td>
<td></td>
</tr>
<tr>
<td>- 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 design documentation, and to give and effectively respond to clear instructions as well as basic competences for transnational communication.</td>
<td></td>
</tr>
<tr>
<td>- 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.</td>
<td></td>
</tr>
<tr>
<td>- 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.</td>
<td></td>
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<tr>
<td>- Knowledge of contemporary issues and ability to appropriately incorporate such knowledge as well as economic and business practices including project, risk and change management into the practice of engineering.</td>
<td></td>
</tr>
<tr>
<td>- An ability to apply modern engineering techniques, skills and tools necessary for the practice of engineering.</td>
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</table>
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.

There must be a regular evaluation of the efficacy for teaching/learning processes.

<table>
<thead>
<tr>
<th>4. Curriculum</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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.</td>
</tr>
</tbody>
</table>

1. **Approach and methodologies for quantifying curriculum content**

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 $K$. 
\[ \sum \text{AU for all common core and compulsory courses for which the computation was carried out on an hourly basis} \]

\[ K = \sum \text{units defined by the institution for the same courses} \]

1.4. The Accreditation Council 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.

1.5. In no case, specification of the Accreditation Unit during the evaluation of an academic program will fall under the country’s requirement. If the country establishes a higher requirement in such specification, the academic program must comply with the country’s requirement.

1.6 In order to establish if the requisite 1,950 AU are complied with, the academic program or university must have had established the entry standards for students in such program, standards that will be taken into account in the final determination of a AU. It is understood that entering students have concluded a degree which is equivalent in all countries of GCREAS. Deviations from these assumptions must be explained away by the academic program in each case.

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, geo-science, 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 fulfill 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 units\(^1\).

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

6.2 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.

5. Faculty

The character of the educational experience is influenced strongly by the competence, expertise, and outlook of the faculty. The faculty delivering the program must have the following characteristics:

– There must be sufficient faculty to cover, by experience and interest, all areas of the curriculum.

\(^1\) While institutions are expected to provide evidence to demonstrate compliance with this criterion, a transition and development period will be allowed. Provided a program continues to contain a minimum of 1,800 accreditation units, no deficiencies will be assessed under this section until one full accreditation cycle.
- There must be a sufficient number of full-time and part-time faculty members to assure adequate levels of student-faculty interaction, student curricular counseling, 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.

**Leadership**

The Dean of Engineering (or equivalent officer) and the head of an engineering academic program (or equivalent officer with overall responsibility each engineering program) are expected to provide effective leadership in engineering education; to have high standing in the engineering community; in what concerns teachers of core engineering courses they are expected to be engineers legally authorized to practice engineering in the corresponding country.

**Expertise and competence of faculty**

Faculty delivering the engineering curriculum are expected to have a high level of expertise and competence, and will be judged by the following factors:

- The level of academic education of its members.
- The diversity of their backgrounds, including the nature and scope of their non-academic experience.
- 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.
- To be legally authorized to practice engineering in their country.

The academic program must have in place a process of evaluation and feedback to the faculty concerning their effectiveness as teachers.

6. **Facilities**

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.

Programs must provide opportunities for students to learn the use of modern engineering tools.
| **7. Support & funding** | Institutional support, financial resources, and constructive leadership must be adequate to assure the quality, continuity of the program and achieve learning objectives.  
Resources must be sufficient to attract, retain, and provide for the continued professional development of a well-qualified faculty.  
Resources also must be sufficient to acquire, maintain, and operate facilities and equipment appropriate for the program.  
- In addition, support personnel and institutional services must be adequate to meet program needs. |
| **8. Continuous improvement** | The program must provide a system that continuously improves the program in accordance with criteria. The necessary activities must be implemented.  
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.  
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. |
## Procedures

<table>
<thead>
<tr>
<th>Item</th>
<th>Stipulation</th>
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<tbody>
<tr>
<td>Evaluation procedure</td>
<td>GCREAS’ accreditation process includes the following general phases: application; presentation of preliminary readiness report; presentation of self-evaluation report; establishment of evaluation team; Preliminary review of self-evaluation report; preparation of evaluation visit; evaluation visit; preparation of visit report; recommendation on accrediting; reconsideration or revisit (if applicable); accreditation decision and communication; and monitoring. Starting with the COVID19 pandemic of 2020, GCREAS introduced in its procedures the optional modality of virtual evaluation visit, detailed in the present Manual, as an alternate procedure whenever the normal in-person evaluation visit is rendered not possible, given equivalent emergency circumstances in the future.</td>
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</table>

1. **Application**  
Programs seeking accreditation must submit a Request for Evaluation. In this application they express their interest in following 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. Programs may be required to participate in the GCREAS events regarding induction for preparation, self-evaluation study and the use of the tools described in the GCREAS Accreditation Manual.

   **Preliminary Readiness Report**  
Programs seeking GCREAS accreditation for the first time will be required to present a Preliminary Readiness Report to substantiate compliance with the minimum requirements stipulated by the Agency to enter said accreditation process. The report should be addressed to the Agency’s Accreditation Council, which will examine it and make a decision on whether the Program’s application would be accepted or not for any particular Accreditation Calendar.

2. **Presentation of self-evaluation report**  
Once the application has been accepted, GCREAS agrees with the program about the delivery date for the self-evaluation report. This report must be prepared based on the established guidelines and delivered at least three months before the visit.

3. **Establishment of evaluation team**  
While the program conducts the self-evaluation, the evaluation team will be formed, but only when the list of programs requesting for accreditation is known. The corresponding consultant committee deliberates about the competences expected to be present in the team members and makes a recommendation to Accreditation Council (AC). 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, AC designates the team. The minimum Evaluation team, for one to two Programs, is composed by a Team Chair and two other 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. The institution is allowed to present a replacement request for one or more members of the evaluation team if it is properly justified. For each additional Program requested to be evaluated in the same visit, an additional member will be added to the Evaluation Team.

4. Preliminary review of self-evaluation report
The Self Evaluation Report is reviewed by the evaluation team. The reviewing is intended to check for completeness and to give the evaluation team the opportunity to ask for additional information from the Program.

5. Preparation for the evaluation visit
The Team Chair will coordinate preparations for the on-site evaluation with other members and program representatives. The Team Chair will propose a date for the visit and a schedule of activities. In this stage visit organization aspects regarding the evaluation team, as well as requirements for meetings are coordinated. Detailed instructions for the preparation of virtual visits are included on pages 116 through 121 of this Document.

6. Evaluation visit
The Team Chair will call the rest of the members for a meeting on the evening prior to the first day of the visit. The usual agenda includes presentation of visit scheduling, procedures, task assignment and discussion about the self-study, 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 determine if evaluation criteria are met. Team members also corroborate aspects regarding the 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, shortcomings, areas of concern, or any other aspect that could be considered of interest). Detailed instructions on how to conduct virtual visits are included on pages 122 through 135 of this Document.

7. Preparation of visit report
During the visit, the evaluation team continues the preparation of the visit report. In this report that was begun prior to the visit. In this report they detail the main findings observed in the visit. Program authorities have the right to raise their comments
regarding errors of fact within the 7 days following the departure of the team from campus. The report is finished by the Team Chair in coordination with the other members within two weeks following the visit. Then it is sent to program authorities in order to allow the program to respond to findings reported by the team.

Based on the feedback provided by the institution, evaluation team chair prepares final evaluation report that is sent to program authorities, to the consulting committee -if one has been established- and the GCREAS accreditation council. This report should include a preliminary recommendation concerning accreditation of the program.

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

9. Accreditation decision and communication
During an Accreditation Council Meeting, an evaluation final report is presented by the Team Chair. If a consulting committee has been established, it participates in the meeting and presents and justifies its accreditation recommendation.

Based on all the documentation that has been compiled during the process, but mainly on the on-site evaluation visit report and consulting committee recommendations, members from GCREAS accreditation council will reach an accreditation decision. The decision is communicated to the program by submitting in writing the final accreditation decision and the corresponding justification for such a decision. A list of accredited programs is published and updated within the GCREAS website.

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

Accreditation can be awarded for shorter periods, subject to the implementation of a strict and verifiable improvement program. If the result of new subsequent evaluations requested by the program warrants it, accreditation can be enlarged up to the maximum period.

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

Informal evaluation or visit (if requested)

By request from an institution, the 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. In the case of virtual informal evaluation visits, the same procedures are applicable as stipulated on pages 116 through 135 of the present Document.

**Process chart**

1. Application presentation
2. Self evaluation report presentation
3. Self evaluation report analysis
4. Visit preparation
5. Designation of visit team
6. Accreditation visit
7. Visit report preparation
8. Accreditation recommendation
9. Accreditation decision and communication
10. Reconsideration or revisit
11. Monitoring

Duration 1 year approx.

"Preliminary Readiness Report (for 1st time Programs)"
The general procedure stipulated above includes the specific steps, functions for each institutional stakeholder and operational documents as described in the following diagram.
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Revised: October 2020
Main concepts

1. Approach and methodologies for quantifying curriculum content

1.1 Accreditation Units (AU) are defined on an hourly basis for an activity which is granted academic credit and for which the associated number of hours corresponds to the actual contact time of that activity between the student and the faculty members, or designated alternates, responsible for delivering the program:

- 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.

Instructions and response for criterion 1.1:

Provide a calculation of the length of the academic term obtained by the following procedure: count the actual number of instructional days, excluding holidays and the final examination period, in both academic terms; divide by 10 (5 days per week for 2 terms). Also provide a description of how AUs were assigned to lectures, laboratories and tutorials that were not of 50-minute duration.

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.

\[ \sum \text{AU for all common core and compulsory courses for which the computation was carried out on an hourly basis} \]

\[ K = \frac{\sum \text{units defined by the institution for the same courses}}{1} \]

1.4 The Accreditation Council 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.

**Instructions and response for criterion 1.4:**
If a “proportionality basis” is used, provide the calculation of K below. If an alternate equivalent measure is used, describe it in the box below. Major departures from the conventional use of AU must be fully described:

---

2. **Curriculum contents:** This need not mean an entire course dedicated to specific material; for example, it may include separate units within an array of courses which address the material.

3. **Minimum path:** It is the set of courses including common core, program compulsory courses, option compulsory courses and elective courses necessary to constitute the minimum number of accreditation units within each curriculum content category.

4. **Up-to-date engineering tools:** This concept is referred to tools like equipment, processes, software, simulation systems that are essential for the given discipline.

5. “**Legally authorized AUs**”: They are the accreditation units from engineering science and engineering design taught by faculty staff who are legally authorized to practice engineering. This is based on the “Statement of Interpretation on Licensure Expectations and Requirements” (Document #3 from Self evaluation Manual Reference Guidelines Section).
6. “Weakest link” principle: A program is only as strong as its weakest link. So a program will be accredited only if it is able to demonstrate that all students from all the different program options are able to satisfy the minimum AU requirements. Regarding faculty, all professors teaching different groups or sections for the same core engineering course must be legally authorized for engineering practice.

7. Full-time professors: This refers to professionals hired by the institution to accomplish tasks related to teaching (giving lectures, tutoring individuals or groups, preparing reading material, evaluating and grading tests and exams, among other). Also, it is understood that under full-time dedication it is desirable to include all collaboration activities in research or project development, participation in the governance or decision organs of the program, and activities of an operational or administrative nature. The duration of the effective workweek should be larger than 35 hours.

8. Part-time professors: This refers to professionals hired by the institution to accomplish tasks similar to the ones of a full-time professor, but whose effective workweek does not exceed 25 hours.
Introduction

The following document is a guide to direct the evaluation and improvement processes for an academic program through a self evaluation process towards program improvement and a positive accreditation decision.

The criteria in this Manual have been established to provide a necessary foundation to identify acceptable engineering programs, to prevent curriculum overspecialization, to provide enough flexibility for innovation in educational processes, to allow adaptation to regional factors and to promote continuous improvement in engineering education.

Engineering professionals must not only be technically competent in their disciplines, but also, they must be conscious about environmental, cultural, economic and social effects of engineering. They must develop communication skills and have the capacity for continuous learning.

General instructions

Self evaluation is a stage that is directed by the academic program and that has as a result, a self evaluation report. This report is the first stage of evaluation for the accreditation process. The following sections of this document comprise instructions and forms which describe the self evaluation report. Each of the criteria contains a statement with key aspects to make a precise interpretation. Evidence to demonstrate adequate performance is required. Also, reference guidelines that will be the base for analysis are provided. The program applying for accreditation can provide any additional information that would be considered pertinent in order to show appropriate performance. Note that, in the case of virtual evaluation visits, especial instructions on how to compile and present evidence to demonstrate adequate performance are spelled out on pages 117 through 121 of this Document.

Forms and tables

The accreditation form included with this manual and the corresponding tables that can be found at the end of this document must be filled out based on the instructions for each criterion. Additional documents justifying aspects of the criteria can also be provided. So, besides the report, general table of contents and additional tables of content are required for base documents used in the analysis.
General institutional and program information

Name and postal address of the institution

Name and title of the chief executive officer of the institution

Name, title and mailing address of the dean
As appropriate, provide the dean’s name, title, mailing address, telephone number and other means of communication (e.g. courier address, e-mail address, fax number, etc.).

Person responsible for organizing the visit
Provide the name, title, mailing address, telephone number and other means of communication (e.g. courier address, e-mail address, fax number, etc.) of the person responsible for organizing the visit. If the person is the same as above, please indicate.

Person responsible for the program
Provide the name, title, mailing address, telephone number and other means of communication (e.g. courier address, e-mail address, fax number, etc.) of the person responsible for the program. If the person is the same as above, please indicate.

Options in this program
List the names of all the options for the program being evaluated, if applicable. Use the names as specified in the calendar.
General guidelines for the accreditation of a program

1.1. Accreditation applies only to programs, not to departments of faculties.

1.2. Application of the accreditation process to an engineering program is undertaken only at the application by the corresponding institution.

1.3. For purposes of accreditation, a program is characterized by a formally approved and published curriculum that is regarded as an entity by the institution and that can be considered independently. All options in the program are examined. Following the principle that a program is only as strong as its “weakest link”, a program is accredited only if all such variations meet the criteria.

1.4. An accredited program must include the word “engineering” in its title.

1.5. The Accreditation Council does not evaluate or accredit non-engineering degrees, diplomas, or certificates or components thereof; only the engineering degree will be listed in the annual report section on accredited engineering programs.

1.6. Accreditation of a program is granted only after students have graduated from the program. For new programs, an accreditation visit may be undertaken in the final year of the first graduating class.

Notes regarding criterion 1.6:
If this is a program from which no students have yet graduated but at least one student is expected to graduate by the time of the decision meeting of the Accreditation Council, attach as a base document used in the analysis (Appendix #5) a copy of the transcript of the student that you believe is most likely to graduate.

1.7. Accreditation is granted for a period of time up to and normally not exceeding six years.

1.8. Any significant change that takes place during the term of accreditation of an accredited engineering program must be reported to the Accreditation Council. Any change related to an aspect referred to in the Accreditation Criteria and Procedures and related regulations is a significant change giving rise to the reporting obligations and may necessitate an immediate reassessment. Any change in the title of an accredited program requires approval by the Accreditation Council for that program’s continued accreditation. When an institution supplies information for the renewal or
extension of accreditation, it has an obligation to highlight and notify the Accreditation Council of any changes to the program.

1.9. The Accreditation Council reserves the right to alter the accreditation status of any program at any institution if it is discovered that such program is not in compliance with any of the Accreditation Council's accreditation criteria or regulations.

1. Accreditation Criteria

GCREAS accreditation criteria for evaluating engineering programs are as described below.

Criterion 1. Students

 Accredited programs must have functional policies and procedures that deal with quality, admission, counseling, promotion and graduation of students.

 Accredited programs must develop and establish specific procedures to recruit students having the required characteristics to achieve educational and teaching objectives.

 They must supervise student progress and evaluate their achievements in relation with program objectives.

 They have to develop and implement policies for proper handling of advanced standing, prior studies and exchange studies cases.

 Enough resources must be devoted to students’ counseling and guidance.

 The Program must assure that appropriate procedures are in place to guarantee that all students fulfill all requirements to graduate.

 Accredited programs must have functional policies and procedures that deal with quality, admission, counseling, promotion and graduation of students. Although all accreditation criteria connect directly and indirectly with the education of the students, attention is drawn to the following in particular: admission; promotion and graduation; and counseling and guidance.
Instructions and responses for criterion 1

Compliance shall be based on a review of the documents that contain a description of processes and policies for admission, promotion, and graduation (see list of appendixes, document #2), and documents that contain a description of procedures to evaluate advanced standing, prior studies, transfer credits and/or exchange studies (see list of appendixes, document #3). Also, information from Table 3.5 (enrolment and graduate information) at the end of this Manual will be analyzed. This must be done as is described in the corresponding Reference Guideline (“Advanced Standing, Prior Studies, Exchange Studies, and Transfer Credit Regulations”).

Admission

There must be documented processes and policies for admission of students. Admission involving advanced standing, prior studies, transfer credits and/or exchange studies must be in compliance with the associated Accreditation Council regulations. The document entitled Advanced Standing, Prior Studies, Exchange Studies, and Transfer Credit Regulations is included in the reference guidelines section of this document.

Instructions and response for criterion 1.1:

Describe the general criteria and procedures for admitting students to the undergraduate engineering program including:

- Regular admission to the initial year of the engineering program at this institution and,
- Non-regular admission including admission with conditions, advanced standing on an individual case-by-case assessment, formal agreements with other institution, etc. Describe how credit for advanced standing is evaluated.

1.1. Promotion and graduation

There must be documented processes and policies for promotion and graduation of students. The institution must verify that all students have met all its regulations for graduation in the program identified on the transcript, and that the curriculum followed is consistent with that of the accredited program. The program name must be appropriate for all students graduating from the program.
Instructions and responses for criterion 1.2:

Describe the engineering unit’s policy on promoting students through the program.

Describe the practices (including formal committee responsibilities) involved in monitoring the academic progress of students; include the practices related to determining probationary status and required withdrawal from programs. Briefly describe any appeal procedures available to students.

Describe any institutional and faculty policies and practices concerning the students with disabilities. Provide details of the manner in which accommodation is made in areas such as exams, laboratories, course requirements, work-experience programs, etc.

Counseling and guidance

There must be processes and sufficient resources for the advising of students.

Instructions and response for criterion 1.3:

Describe the process involved in advising and counseling students regarding course selection for the technical elective portion of the program; include any approved list(s) of courses from which students make their selection and describe the use of such list(s). Please summarize below:
1.2. Degree auditing

A requirement for accreditation is that the institution has verified, using methodologies accepted by the Accreditation Council, that all its student-related policies, procedures, and regulations apply to, and are met by, all students.

Instructions and response for criterion 1.4:
Describe the institution’s process for degree auditing in the space below. Compliance will also be based on transcript analysis (see section 4.11: Evaluation of curriculum content criterion).

Criterion 2. Program Objectives

The program must establish and publish specific learning and educational objectives to be coherent with the mission of the institution. The objectives must be defined in such a way as to allow the identification of stated knowledge and abilities to be mapped to the contents that will be described in the attributes criterion of the accreditation model.

The learning and educational objectives must have been established based on the different requirements of the interest groups within the institution. They must be checked and documented in a periodic basis in order to show that the objectives of the related interest groups are being met.

The program objectives must be widely disclosed on and off campus, and the performance of the program must be monitored in order to document the degree of its achievements.

Instructions and response for criterion 2

Compliance shall be based on a review of the documents that refer to academic objectives of both the institution and program and which establish and set out control procedures for the objectives (base information used in the analysis, appendix #1).

Describe the objectives for the program and their relation with institutional objectives. Describe the way in which the objectives are published.
Describe the way in which the needs of the interest groups are taken into account in establishing the program objectives and the way in which the program accomplishment are checked relative to the objectives.

**Criterion 3. Graduate Attributes**

The institution must demonstrate that the graduates of a program possess the attributes under the following headings. Program must be evaluated based on the attributes and must show improvement on the basis of the results of the evaluation. Engineering programs are expected to continually improve.

It is recognized that graduates will continue to build on the foundations that their engineering education has provided.

**Notes regarding criterion 3:**
The Accreditation Council and universities must develop methods of evaluating success in achieving the attributes. For this reason, the attributes will not form a basis for accreditation decisions at the moment. However, to assist in the development of evaluation methods, you are requested to complete this section of the questionnaire as fully as possible. Methods of evaluation that have been identified currently are based on a review of:

- Textbooks and other supporting materials for all core, program compulsory, and elective courses (not necessarily including non-technical elective courses) including:
  - course outlines (lecture-by-lecture is best)
  - lecture notes and visual aids
  - course materials posted on the web

- Samples of graded student work and examinations should demonstrate a range of student performances, from outstanding to unacceptable. Please include the original problem statements with your samples. Visiting team members will verify that grading and course difficulty levels are appropriate.

- For programs where there are more than 20 students, a sample of 20 anonymous student transcripts is required for the most recent graduating class. For programs with less than 20 students in the graduating year, provide all available transcripts with identifying information removed. Transcripts are
to be provided for the program being visited and should be included with the completed questionnaire.

- Student design reports and/or theses for the program being visited
- Models or equipment constructed by students and other evidence of student performance
- Laboratory instruction sheets
- Information about the professors in charge and instructors, including status (faculty or seasonal, qualifications, and professional registration)
- Access to student files when the team is on site to corroborate transcript information
- On-site interviews

If the institution wishes to provide additional information (i.e: Work term experience/reports, Employer surveys, Exit interview, Graduate surveys), a description of this evidence should be provided in the boxes after each attribute. The institution is encouraged to provide any other evidence they consider relevant.

### 3.1 A knowledge base

Demonstrated competence in university level mathematics, natural sciences, engineering fundamentals, and specialized engineering knowledge.

**Response to criterion 3.1:**


### 3.2 Investigation

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.

**Response to criterion 3.2:**


### 3.3 Design

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.
Response to criterion 3.3:

3.4 Leadership and team work
An ability to work effectively as a member and leader in teams, preferably in a multi-disciplinary setting.

Response to criterion 3.4:

3.5 Problem analysis
An ability to use appropriate knowledge and skills to identify, formulate, analyze, and solve complex engineering problems.

Response to criterion 3.5:

3.6 Professionalism
An understanding of the professional responsibility and ethics towards society and the protection of the public interest.

Response to criterion 3.6:

3.7 Communication skills
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 design documentation, and to give and effectively respond to clear instructions as well as basic competences for transnational communication.

Response to criterion 3.7:
3.8 Appreciation of impact of engineering on society

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.

Response to criterion 3.8:

3.9 Life-long learning

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.

Response to criterion 3.9:

3.10 Contemporary knowledge

Knowledge of contemporary issues and ability to appropriately incorporate such knowledge as well as economic and business practices including project, risk and change management into the practice of engineering.

Response to criterion 3.10:

3.11 Modern tools

An ability to apply modern engineering techniques, skills and tools necessary for the practice of engineering.

Response to criterion 3.11:
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.

There must be a regular evaluation of the efficacy for teaching/learning processes.

**Criterion 4. Curriculum**

The curriculum content criteria 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. All students must meet all curriculum content criteria.

**4.1 The title of an accredited engineering program must be properly descriptive of the curriculum content.**

**Instructions for criterion 4.1:**
Attach as Appendix #4 (base information used in the analysis) copies of degree certificates and copies of transcript entries, including all variations which might include options, distinctions, minors, etc.

**4.2 The Accreditation Council must have evidence that the program name is appropriate for all students graduating in the program regardless of the option taken.**

**Notes regarding criterion 4.2:**
Conformance with this criterion will be evaluated based on a review of the “Summary of Curriculum table” (Table 3.8 at the end of this Manual). Additional comments may be provided in the following space.

Additional comments.
4.3 If a program, by virtue of its title, becomes subject to the content requirements for two or more engineering curricula, then the program must meet the Accreditation Council requirements for each engineering curriculum named.

Notes regarding criterion 4.3:
Conformance with this criterion will be evaluated based on a review of the “Summary of Curriculum Table”. Additional comments may be provided in the following space.

Additional comments.

4.4 The Accreditation Council must have evidence that all engineering options contain a significant amount of distinct curriculum content and that the name of each option is descriptive of that curriculum content. A “Statement of Interpretation on Curriculum Content for Options and Dual-Discipline Programs” is included as an appendix to this questionnaire.

Notes regarding criterion 4.4:
Conformance with this criterion will be evaluated based on a review of the “Summary of Curriculum table” (Table 3.8 at the end of this Manual). Additional comments may be provided in the following space.

Additional comments.

4.5 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 instruction in safety procedures

In no case, specification of the Accreditation Unit during the evaluation of an academic program will fall under the country’s requirement. If the country establishes a higher requirement in such specification, the academic program must comply with the country’s requirement.

In order to establish if the requisite 1,950 AU are complied with, the academic
program or university must have had established the entry standards for students in such program, standards that will be taken into account in the final determination of a AU. It is understood that entering students have concluded a degree which is equivalent in all countries of GCREAS. Deviations from this assumption must be explained away by the academic program in each case.

4.6. Mathematics and Natural Sciences

A minimum of 420 AU of a combination of mathematics and natural sciences are required. Within this combination, each of mathematics and natural sciences must not be less than 195 AU. An Interpretive Statement on Natural Sciences is included as a reference guideline in this Manual.

4.6.1 Mathematics

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.

Instructions for criterion 4.6.1:
Complete Table 4.6.1 for the program to be accredited. In order to be included in this table, a course must lie on the “minimum path”. Although not all courses containing mathematics content need be included here, care should be taken to ensure that sufficient content is claimed to satisfy the criterion.

In the last column, indicate “Linear algebra”, “Differential calculus”, “Integral calculus”, “Differential equations”, “Probability”, “Statistics”, “Numerical analysis” and “Discrete mathematics” when elements of these subjects are present. A course may contain elements of more than one curriculum component if justifiable.
### Table 4.6.1: Mathematics content summary

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course name</th>
<th>Math AU</th>
<th>Course contact(s)</th>
<th>Specify relevant content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1234</td>
<td>Algebra II</td>
<td>35</td>
<td>Terry P. Smith</td>
<td>Linear algebra</td>
</tr>
</tbody>
</table>

| Total | Minimum required | 195 |

### 4.6.2 Natural sciences

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 used to satisfy this category. These subjects are intended to impart an understanding of natural phenomena and relationships through the use of analytical and/or experimental techniques.

**Instructions for criterion 4.6.2:**

Complete Table 4.6.2 for the program to be accredited. In order to be included in this table, a course must lie on the “minimum path”. Although not all courses containing natural science content need be included here, care should be taken to ensure that sufficient content is claimed to satisfy the criterion.

In the last column, enter the words “Chemistry”, “Physics”, “Life science” or “Earth science” beside those courses that include elements of these subjects. A course may contain elements of more than one curriculum component if justifiable.

### Table 4.6.2: Natural science content summary

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course name</th>
<th>NS AU</th>
<th>Course contact(s)</th>
<th>Specify relevant content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1234</td>
<td>Chemistry I</td>
<td>40</td>
<td>Terry P. Smith</td>
<td>Chemistry</td>
</tr>
</tbody>
</table>

| Total | Minimum required | 195 |

Revised: October 2020
4.7 Engineering science and engineering design

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.

Instructions for table 4.7a:
Complete Table 4.7a for the program to be accredited based on the previous academic year. Provide the total number of combined engineering science and engineering design AU and the total number of “Legally authorized” engineering science and engineering design AU for each program option. “Legally authorized” AUs are earned only for courses for which the instructor is qualified using the definitions provided in the Statement of Interpretation on Licensure Expectations and Requirements (Reference Guideline #3).

Table 4.7a: Summary of engineering science and engineering design AU

<table>
<thead>
<tr>
<th>Program option name</th>
<th>Total of engineering science and engineering design AUs</th>
<th>Total of “Legally authorized” engineering science and engineering design AUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum required</td>
<td>900</td>
<td>450</td>
</tr>
</tbody>
</table>

Instructions for table 4.7b
Complete Table 4.7b for the program to be accredited based on the previous academic year. Provide the requested AU numbers, course information, and licensure information for all instructors delivering the course. Include only courses containing engineering science and/or engineering design which fall on the minimum path in the curriculum analysis. Where there are multiple instructors, please break down the AU for that course accordingly.
Table 4.7b: Licensure status of instructors delivering engineering science and engineering design AU

<table>
<thead>
<tr>
<th>Course number and name</th>
<th>Course contact(s)</th>
<th>Instructor(s)</th>
<th>Licensure status of instructor(s)</th>
<th>ES</th>
<th>ED</th>
<th>ED</th>
<th>ES+ED</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

|                        |                  |               | Total                             |    |    |    |        |
|                        |                  |               |                                    |    |    |    |        |
|                        |                  |               | Minimum required                  | 225| 225| 900| 225   |
|                        |                  |               |                                    |    |    |    | 450    |

4.7.1 Engineering science

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, geosciences, computer science, and environmental science.

4.7.2 Other engineering science content

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. “Other” engineering science content can be counted toward the total of the engineering science content.
Instructions for criterion 4.7.2:
Complete Table 4.7.2 for the program to be accredited based on the previous academic year. In order to be included in this table, a course must lie on the “minimum path”. In the last column, enter the engineering discipline for which content is addressed in the course. A course may contain elements of more than one curriculum component if justifiable.

Table 4.7.2: Other engineering science content

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course name</th>
<th>Other ES AU</th>
<th>Course contact(s)</th>
<th>Specify engineering content of other disciplines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please include any additional information here.

4.7.3  Engineering design
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.

4.7.4  Significant design experience
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.

Instructions for criterion 4.7.4:
Describe the curriculum content that satisfies this criterion and indicate the name(s) of the individuals responsible for supervising the culminating design experience. Ensure sufficient detail in your description to demonstrate presence of the various elements.
4.7.5 Modern engineering tools

Appropriate content requiring the application of modern engineering tools must be included in the engineering sciences and engineering design components of the curriculum.

Instructions for criterion 4.7.5:
Describe the curriculum content that satisfies this criterion.

4.8 Complementary studies

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

4.8.1 While considerable latitude is provided in the choice of suitable content for the complementary studies component of the curriculum, 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. Written and oral communications
e. Health and safety
f. Professional ethics, equity and law
g. Sustainable development and environmental stewardship

Instructions for criterion 4.8.1:
Complete Table 4.8.1 for the program to be accredited. In order to be included in this table, the curriculum content must comply with the weakest-link principle. In the last column enter the area of study beside those courses that include elements of these subjects. A course may contain elements of more than one curriculum component if justifiable.

In some cases, a course or courses may be selected from a list. In such cases, indicate whether the course is an elective.
Table 4.8.1: Complementary studies content summary

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course name</th>
<th>Elective</th>
<th>CS AU</th>
<th>Course contact(s)</th>
<th>Area of study</th>
</tr>
</thead>
<tbody>
<tr>
<td>1234</td>
<td>Professional Practice of Engineering</td>
<td>X</td>
<td>37</td>
<td>Terry P. Smith</td>
<td>Ethics, equity &amp; law; Environment; Health &amp; safety</td>
</tr>
</tbody>
</table>

| Total    |                                           |          |       |                   |                                             |
| Minimum required |                                           |          | 225   |                   |                                             |

4.8.2 Language instruction

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

Notes regarding criterion 4.8.2:
Conformance with this criterion will be evaluated based on information provided in response to Criterion 4.8.1.

4.9 The entire program must include a minimum of 1,950 Accreditation Units

Instructions for criterion 4.9:
Complete Table 4.9. The Total AU for the program and/or each option can be taken from Table 3.8e.

Table 4.9: Summary of AU content for each program and/or option

<table>
<thead>
<tr>
<th>Program and/or option</th>
<th>Total AU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum required</td>
<td>1950</td>
</tr>
</tbody>
</table>
4.10 Laboratory experience

Appropriate laboratory experience must be an integral component of the engineering curriculum. Instruction in safety procedures must be included in preparation for students’ laboratory and field experience.

Instructions for criterion 4.10:
Complete Table 4.10. Description of the experiments need include only names that convey the content of each experiment. In the last column, confirm that students have received course content related directly to safety, including testing their knowledge of safety during examinations.

Table 4.10: Laboratory experience

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course name</th>
<th>Course contact(s)</th>
<th>Description of the experiments</th>
<th>Safety addressed?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes/No</td>
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</tr>
</tbody>
</table>

4.11 Evaluation of curriculum content

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

Notes regarding criterion 4.11:
Conformance with this criterion will be evaluated based on a review of student transcripts. This review will be based on the “Summary of Transcripts” Table (section 3.6).
4.11.1 Prior education

It is recognized that, for programs at some institutions, some of the mathematics, natural sciences and complementary studies components of the curriculum may have been covered in prior university level (or post-secondary) education and this circumstance must be considered in the institution’s admission policy.

Notes regarding criterion 4.8.1:
Conformance with this policy will be evaluated based on documents contained in Appendixes #2 and #3 (Base information used in the analysis). Additional comments may be provided in the following space.

Additional comments.

Criterion 5. Faculty

The character of the educational experience is influenced strongly by the engineering competence, expertise, and outlook of the faculty. The faculty delivering the program must have the following characteristics:

5.1 Faculty qualifications and experience

There must be sufficient faculty to cover, by experience and interest, all of the areas of the curriculum.

Instructions for criterion 5.1:
Complete Table 5.1. First identify the areas of curriculum; for example, mechanical engineering may have areas of solid mechanics, thermo-fluids, and materials science. List the faculty member(s) who teach in each area including their academic qualifications (BSc, MSc, PhD, etc.). Also include any non-academic related experience, such as any industrial or related experience, that would make them particularly qualified to teach in the area.

Table 5.1: Faculty qualifications and experience

<table>
<thead>
<tr>
<th>Areas of curriculum</th>
<th>Faculty member</th>
<th>Academic qualifications</th>
<th>Licensure status</th>
<th>Related experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
5.2 Sufficient number of full-time faculty

Even though the faculty involved in the delivery of program elements may include full-time and part-time members, there must be a sufficient number of full-time faculty members to assure adequate levels of student-faculty interaction, student curricular counseling and faculty participation in the development, control and administration of the curriculum.

Notes and response for criterion 5.2:
Conformance with this criterion will be evaluated based on a review of the Summary of Academic Staff table (Table 3.1 at the end of this Manual). Additional comments may be provided in the following space.

5.3 Balance of faculty duties

Faculty administrative and teaching duties should be appropriately balanced to allow for adequate participation in research, scholarly work, professional development activities, and industrial interaction.

Notes and response for criterion 5.3:
Conformance with this criterion will be evaluated based on a review of the Summary of Academic Staff table (Table 3.1 at the end of this Manual). Additional comments may be provided in the following space.

5.4 Under no circumstances should a program be critically dependent on one individual.

Notes regarding criterion 5.4:
Conformance with this criterion will be evaluated based on a review of the Summary of Academic Staff table. (Table 3.1 at the end of this Manual) Conformance may also be evaluated based on interviews that take place during the visit. Additional comments may be provided in the following space.

5.5 Leadership

The Dean of Engineering (or equivalent officer) and the head of an engineering program (or equivalent officer with overall responsibility for 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 jurisdiction in which the institution is located, based on the Reference Guideline #3 about licensure status.

**Instructions for criterion 5.5:**
Complete Table 5.5. Provide the name of the officer, his/her position, her/his professional designation, and the licensing association. If the officer is not a licensed engineer provide an explanation.

**Table 5.5: Officers responsible for the engineering department and program**

<table>
<thead>
<tr>
<th>Name of officer</th>
<th>Position</th>
<th>Professional designation</th>
<th>Province/territory where licensed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dean of Engineering</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**5.6 Expertise and competence of faculty**
Faculty delivering the engineering curriculum are expected to have a high level of expertise and competence, and to be dedicated to the aims of engineering education and of the self-regulating engineering profession, which will be judged by the following factors:

- Level of academic education
- Diversity
- Effective communication
- Experience in teaching, research, and design practice
- Level of scholarship as shown by scientific, engineering and professional publications
- Degree of participation in professional, scientific, engineering and learned societies
- Personal interest in, and documented support of, the curriculum and program-related extra-curricular activities
- Appreciation of the role and importance of the self-regulating engineering profession, and of positive attitudes towards professional licensure and involvement in professional affairs.
5.6.1 The level of academic education of its members

Notes for criterion 5.6.1:
Conformance with this criterion will be evaluated based on a review of the Summary of Academic Staff table (Table 3.1 at the end of this Manual) and Academic Staff Information Sheets (Table 3.2 at the end of this Manual). Additional comments may be provided in the following space.

5.6.2 Diversity of faculty

The diversity of their backgrounds, including the nature and scope of their non-academic experience.

Notes for criterion 5.6.2:

Conformance with this criterion will be evaluated based on a review of the Summary of Academic Staff Table (Table 3.1 at the end of this Manual). Additional comments may be provided in the following space.

5.6.3 Ability of faculty to communicate effectively

Notes for criterion 5.6.3:
Conformance with this criterion will be evaluated based on interviews with the faculty and students, as well as review of lecture notes and comments made on exams, tests, problem sets, lab reports, etc. Additional comments may be provided in the following space.

5.6.4 Experience in teaching, research, and design practice

Notes for criterion 5.6.4:
Conformance with this criterion will be evaluated based on a review of the Academic Staff Information Sheets (Table 3.2 at the end of this Manual). Additional comments may be provided in the following space.
5.6.5 Level of scholarship as shown by scientific, engineering and professional publications

Notes for criterion 5.6.5:
Conformance with this criterion will be evaluated based on a review of the Academic Staff Information Sheets (Table 3.2 at the end of this Manual). Additional comments may be provided in the following space.

5.6.6 Degree of participation in professional, scientific, engineering and learned societies

Notes for criterion 5.6.6:
Conformance with this criterion will be evaluated based on a review of the Academic Staff Information Sheets (Table 3.2 at the end of this Manual). Additional comments may be provided in the following space.

5.6.7 Personal interest in, and documented support of, the curriculum and program-related extra-curricular activities

Notes for criterion 5.6.7:
Conformance with this criterion will be evaluated based on a review of the Academic Staff Information Sheets (Table 3.2 at the end of this Manual). Additional comments may be provided in the following space.
5.6.8 Appreciation of the role and importance of the self-regulating engineering profession, and of positive attitudes towards professional licensure and involvement in professional affairs

Notes for criterion 5.6.8:
Conformance with this criterion will be evaluated based on a review of the Academic Staff Information Sheets (Table 3.2 at the end of this Manual). Additional comments may be provided in the following space.

5.7 Professional status of faculty members

Faculty delivering curriculum content that is engineering science and/or engineering design are expected to be licensed to practice engineering in the jurisdiction in which the institution is located. This is based on the “Statement of Interpretation on Licensure Expectations and Requirements” (Document #3 from Reference Guidelines section).

Notes for criterion 5.7:
Conformance with this criterion will be evaluated based on the institution’s responses to Criteria 4.7.1 and 4.7.3. Additional comments may be provided in the following space.

Criterion 6. Facilities

Classrooms, laboratories, practice rooms, technological and computing resources, libraries and other information resources, study rooms, snack bars and associated equipment must be adequate to safely accomplish the program objectives and provide an atmosphere conducive to learning.

Programs must provide opportunities for students to learn the use of modern engineering tools.

Notes and response for criterion 6

Conformance with this criterion will be evaluated based on visit interviews with support staff for these facilities. Describe facilities and other equipment.
characteristics and the way in which this equipment contributes to objectives accomplishment. Additional comments may be provided in the following space.

Criterion 7. Support and funding

Institutional support and financial resources must be adequate to assure the quality and continuity of the program, and assure educational objectives accomplishment. Resources must be sufficient to attract, retain, and provide for the continued professional development of a well-qualified faculty. Resources also must be sufficient to acquire, maintain, and operate facilities and equipment appropriate for the program. In addition, support personnel and institutional services must be adequate to meet program needs.

Financial resources must be sufficient to ensure that:

7.1 Qualified academic staff can be recruited, retained and provided with continuing professional development.

Notes for criterion 7.1:
Conformance with this criterion will be evaluated based on a review of the Summary of Staff Changes table (Table 3.3 at the end of this Manual). Additional comments may be provided in the following space.

7.2 Qualified support staff can be recruited, retained and provided with continuing professional development.

Notes for criterion 7.2:
Conformance with this criterion will be evaluated based on a review of the Summary of Staff Changes table (Table 3.3 at the end of this Manual). Additional comments may be provided in the following space.
7.3  **Infrastructure can be acquired, maintained, and renewed.**

**Notes for criterion 7.3:**
Conformance with this criterion will be evaluated based on a review of the Summary of Expenditures table. (Table 3.4 at the end of this Manual). Additional comments may be provided in the following space.

7.4  **Equipment can be acquired, maintained and renewed.**

**Notes for criterion 7.4:**
Conformance with this criterion will be evaluated based on a review of the Summary of Expenditures table (Table 3.4 at the end of this Manual). Additional comments may be provided in the following space.

**Criterion 8. Continuous improvement**

Each program must show evidence of continuous improvement and revision of actions.

It must favor interaction among the different involved sectors. They will give feedback information in order to help program improvement following requirements and worldwide trends.

Feedback information will also be obtained both from program self evaluation results and from the different involved sectors: students, graduates, employers, professional associations and other involved sectors.

Professors will be evaluated and both the results of the evaluation and feedback information will be used to improve their performance.

**Notes and response for criterion 8**

Conformance with this criterion will be evaluated based on visit interviews with involved staff and reviewing feedback reports. Describe feedback and evaluation procedures and tools to obtain information that will guide decisions. Additional comments may be provided in the following space.
2. Base documents used in the analysis

The following information must be provided, and is referenced at various points in the self evaluation manual. Please number and attach the appendixes at the end of the completed questionnaire.

Exhibit 1: Mission statements, vision statements, strategic plans, objectives and similar documents

Provide mission statements, vision statements, strategic plans and similar documents that affect the program being evaluated. Besides these, documents about the program’s academic objectives and procedures for monitoring and control of accomplishments must be provided.

Exhibit 2: Admission, promotion, and graduation

Provide documents describing the processes and policies for admission, promotion, and graduation. The profile of the promoted cohorts of students and of the graduating groups should be included along with an indication of the associated retention rates. This is required to satisfy Criteria 1 and 4.11.1.

Exhibit 3: Advanced standing, prior studies, transfer credits and/or exchange studies

Provide documents describing the procedures to evaluate advanced standing, prior studies, transfer credits and/or exchange studies required to satisfy Criterion 4.11.1.

Exhibit 4: Degree certificates and transcripts

Provide samples of degree certificates and transcripts for all variations of each program. This is required to evaluate the proper accomplishment of accreditation criteria4.1.

Exhibit 5: Transcript of the student “most likely to graduate”

If this is a program from which no students have yet graduated but at least one student is expected to graduate by the time of the decision meeting of the
Accreditation Council, attach a copy of the transcript of the student that you judge “most likely to graduate”. See general guideline # 1.6 at the beginning of this self evaluation manual.

**Exhibit 6: Self-appraisal**

The most recent information feedback reports for improving the program must be attached. Describe the current strengths and needed improvements for the program. Summarize institutionally approved curriculum changes, major developments and/or progress made in connection with the program since the last Accreditation Council evaluation (if applicable). Also describe the feedback process used to determine that these changes have/will improve the quality of the educational experience.

If specific deficiencies, weaknesses or concerns were noted by the Accreditation Council (as reported in the Accreditation Council Chair’s accreditation decision letter) for the program following the last evaluation, refer to them and indicate the action taken in each case.

**3. Data tables**
The tables that follow are an integral component of the evaluation process.

### 3.1 Summary of academic staff tables: Instructions

**Table 3.1a: Summary of academic staff holding continuing appointments**

Complete Table 3.1a for all academics that hold a continuing appointment and teach/taught at least one course during the last two years that contained AUs of engineering science and/or engineering design.

**Table 3.1b: Summary of academic staff not holding continuing appointments**

Complete Table 3.1b for all academics that do not hold a continuing appointment and teach/taught at least one course during the last two years that contained AUs of engineering science and/or engineering design.

Explanations of the data to be entered for Tables 3.1a and 3.1b:

- Column 1: Enter the names of all academics
- Column 2: Enter the rank of the academic as of the date of submitting this documentation. Choose one of the following: Full professor (FP); Emeritus...
professor (EP); Associate professor (AP); Assistant professor (SP); Lecturer (L); Instructor (I); Senior instructor (SI); Sessional (S); Graduate student (GS)

- Column 3: Enter the date of hire.
- Column 4: Enter the licensure status. Choose one of the following: “Legal H” for legally authorized to practice professionally. “No Legal H” if the academic is not licensed.
- Columns 5 through 8: Enter the course numbers for courses taught at the undergraduate and graduate levels during the last two years.
### 3.1a Summary of academic staff holding continuing appointments

<table>
<thead>
<tr>
<th>Name of faculty member</th>
<th>Rank</th>
<th>Hire date</th>
<th>Professional engineering licensure status</th>
<th>Teaching</th>
<th>Undergraduate</th>
<th>Graduate</th>
<th>Last academic</th>
<th>This academic</th>
<th>Last academic</th>
<th>This academic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terry D. Smith</td>
<td>FP</td>
<td>Aug. 2005</td>
<td>Legal H</td>
<td>ENG200, DES422</td>
<td></td>
<td>ENG200, DES422</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3.1b Summary of academic staff not holding continuing appointments

<table>
<thead>
<tr>
<th>Name of faculty member</th>
<th>Rank</th>
<th>Hire date</th>
<th>Professional engineering licensure status</th>
<th>Teaching Undergraduate</th>
<th>Graduate</th>
<th>Last academic</th>
<th>This academic</th>
<th>Last academic</th>
<th>This academic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terry D. Smith</td>
<td>FP</td>
<td>Aug. 2005</td>
<td>Legal H</td>
<td>ENG200, DES422</td>
<td>ENG200, DES422</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3.2 Academic staff information sheet

Complete an Academic staff information sheet for all persons involved in the delivery of the program, including the dean, each associate and/or assistant dean(s), and all other academic officers of the engineering unit. At the time of the visit, the evaluators may require additional information. Please ensure that up-to-date curricula vitae are available.

<table>
<thead>
<tr>
<th>1. Name and rank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Department</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Tenured</th>
<th>Tenure track</th>
<th>Limited term</th>
<th>Other (specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Degrees</th>
<th>Field</th>
<th>Date awarded</th>
<th>Institution / country</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Date of original appointment and rank</th>
</tr>
</thead>
<tbody>
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</table>

<table>
<thead>
<tr>
<th>6. Advancement in rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>7. Current professional engineering registration (P.Eng. or ing.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Province / territory</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>8. Current memberships (e.g. Professional, scientific or standards development)</th>
</tr>
</thead>
<tbody>
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</table>

<table>
<thead>
<tr>
<th>9. Sabbatical leaves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
10. Courses taught in the past three years (course number and title)

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Number of student theses supervised

<table>
<thead>
<tr>
<th>U.G.</th>
<th>Masters</th>
<th>Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Completed (last 3 years)
Completed (lifetime)
In progress

12. Scholarship / publications

<table>
<thead>
<tr>
<th>Scholarship</th>
<th>Refereed journals</th>
<th>Referred conference</th>
<th>Other publications (identify)</th>
<th>Patents</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.G.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ph.D.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Number (last 6 years)
Number (lifetime)

13. Funding

<table>
<thead>
<tr>
<th>NSERC research grants</th>
<th>Other research grants</th>
<th>Research contracts</th>
<th>Non-research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current / Year</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Total (last 5 years)</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

14. Brief description of main areas of professional / scholarly activity
(technical and research interests, offices held in professional and technical organizations, participation on technical standards development committees, etc.).

15. Industrial and related experience.

16. Honors and awards and other pertinent information.

Date: _______________ Signature: ______________________________________
### 3.3 Summary of staff changes

Complete this table including all continuing academic faculty who teach/taught courses containing engineering science and/or engineering design in the program in the last six years. Please indicate the dates in each column for each faculty member. If a member was appointed and subsequently left within the six-year period, enter the name only once and then enter the two dates in the appropriate columns.

<table>
<thead>
<tr>
<th>Faculty complement for the last six years</th>
<th>Appointed</th>
<th>Retired</th>
<th>Resigned</th>
<th>Deceased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of faculty member</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Total count
### 3.4 Summary of expenditures

<table>
<thead>
<tr>
<th>Expenditure category</th>
<th>Academic year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Salaries and benefits</td>
<td></td>
</tr>
<tr>
<td>Continuing academic</td>
<td></td>
</tr>
<tr>
<td>Seasonal academics</td>
<td></td>
</tr>
<tr>
<td>Teaching assistants</td>
<td></td>
</tr>
<tr>
<td>Support staff</td>
<td></td>
</tr>
<tr>
<td>Benefits</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>$0.00</td>
</tr>
<tr>
<td>Operating expenditures</td>
<td></td>
</tr>
<tr>
<td>Teaching/office supplies</td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>$0.00</td>
</tr>
<tr>
<td>Equipment expenditures (specify)</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>$0.00</td>
</tr>
<tr>
<td>Other expenditures/acquisitions (specify)</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>$0.00</td>
</tr>
</tbody>
</table>
## 3.5 Enrollment and degree data

<table>
<thead>
<tr>
<th>Academic year</th>
<th>Total new students entering program</th>
<th>Total students in program</th>
<th>Bachelor degrees conferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>The program as a whole:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current year (less one)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current year (less two)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option: Name</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Option: Name</td>
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<td></td>
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<tr>
<td>Option: Name</td>
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<td></td>
</tr>
</tbody>
</table>

## 3.6 Summary of transcript: Instructions

If your institution performs a formal degree audit that is equivalent to the process described below, or that provides equivalent results, please provide copies of the degree audit report for the selected students. Otherwise complete the table below. For the selected students, provide transcript analyses according to the following guidelines:

- In the Course column, enter the course numbers of the compulsory courses as they appear in the Curriculum Summary Tables. For Elective courses, enter the word “Elective” in Column 1.
- In the Conformance column, enter the course numbers of the courses actually taken by the student that were accepted to satisfy the course requirement in the first column.
• If the first and second columns are not identical, then add a note to explain why. Number the notes consecutively in the Note column and enter the notes in the space below the table.
### 3.6a Summary of transcript

Student identifier: _____

Date of first registration in program: _____

Date of graduation from program: _____

<table>
<thead>
<tr>
<th>Course</th>
<th>Conformance</th>
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<th>Course</th>
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Notes:

1. 
2.
3.7 Course information sheet: Instructions

Please complete a course information sheet for each common core course (i.e. for each course required of all students in the engineering program). Where the information on these sheets differs from the information in the calendar, an explanation must be provided.

Notes and instructions:
1. The requested information for the common core courses is to be provided in this section and tabulated in response to Table 3.8a and Table 3.8b.

2. Samples of graded student work and examinations, textbooks and other supporting materials must be available in a central location at the time of the visit. It is important that the visiting team be informed of the location of these documents at the beginning of the visit. The samples should include a range of student performances (i.e. from outstanding to unacceptable).

3. Provide the requested information for the most recent academic year. If necessary, a tabular update should be provided at the time of the visit.

4. For Calendar reference, provide the description of the course that appears in the calendar and the calendar page number.

5. For course type, please choose one of the following: Compulsory common core course; Compulsory program course; Compulsory option; or Elective.

6. For curriculum category content, please provide the AU breakdown according to the curriculum content categories (mathematics, natural science, complementary studies, engineering science, and engineering design).

7. In identifying the Professor in-charge and Other instructors, provide the name, highest degree, professional engineering registration, rank and departmental affiliation, as appropriate.

8. When indicating Laboratory experience, please include only names that convey the content of each experiment.
### 3.7a Course information sheet

To be completed for every course that appears in the 3.8 tables that follow.

<table>
<thead>
<tr>
<th>Course number and title:</th>
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<table>
<thead>
<tr>
<th>Calendar reference*</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Course type: (indicate with X)</th>
<th>Common core</th>
<th>Program compulsory</th>
<th>Option compulsory</th>
<th>Program elective</th>
<th>Other</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Curriculum category content (number of AU):</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Math</th>
<th>Natural science</th>
<th>Complementary studies</th>
<th>Engineering science</th>
<th>Engineering design</th>
</tr>
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<tr>
<th>Professor-in-charge:</th>
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<tr>
<th>Other instructors:</th>
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</table>

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<tr>
<th>Teaching assistants: (number/total hours)</th>
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<tr>
<th>Instructional hours per week</th>
<th>Maximum number of students per section</th>
<th>Total number of lecture sections</th>
<th>Total number of lab/tutorial sections</th>
<th>Maximum number of students per lab/tutorial section</th>
<th>Average grade</th>
<th>Average failure rate (%)</th>
</tr>
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<tr>
<th>Major topics:</th>
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| 1. |
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<th>Prescribed text(s):</th>
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| 1. |
| 2. |

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<thead>
<tr>
<th>Laboratory experience:</th>
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</table>

*Explanatory notes on inconsistencies with calendar information (if applicable):*
3.8 Summary of curriculum tables: Instructions

Complete this table by entering your information below in keeping with the following guidelines:

- Column 1: Enter the course number and an abbreviated (but descriptive) course title.
- Column 2: Enter the academic credit units as assigned by the University.
- Column 3: Enter the actual lecture hours in the course.
- Column 4: Enter the actual tutorial plus laboratory hours in the course. These numbers must represent the actual contact hours, not simply a nominal number of hours per week times the number of weeks of instruction.
- Columns 6 through 13: Distribute the AU between the categories (Math; NS/natural sciences; CS/complementary studies; ES/engineering science; ED/engineering design), observing the following:
  - It is expected that no more than three categories should be used for any one course.
  - It is expected that no less than 25% of the total AU should appear in any category.
  - For any course that does not conform to these expectations, enter a note in the space below the tables to justify the deviation; number the notes consecutively and index them in Column 17.
- Columns 14 through 16: Indicate the AU only for curriculum content delivered by faculty members that meet the professional practice requirements. This should be based on the Reference Guideline #3 below about legal authorization for professional practice.
3.8a Compulsory common core courses

Option: 

<table>
<thead>
<tr>
<th>Course number and title</th>
<th>AC</th>
<th>Lec.</th>
<th>Lab/ Tut.</th>
<th>Total AU</th>
<th>Math</th>
<th>NS</th>
<th>M+NS</th>
<th>CS</th>
<th>ES</th>
<th>ED</th>
<th>ES+ED</th>
<th>Other</th>
<th>ES</th>
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<th>ES+ED</th>
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Notes:

1.
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### 3.8b Program-compulsory courses

**Option:**

<table>
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<tr>
<th>Course number and title</th>
<th>AC</th>
<th>Lec.</th>
<th>Lab/ Tut.</th>
<th>Total AU</th>
<th>Curriculum components (AU)</th>
<th>&quot;Legally authorized&quot; AU</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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<td></td>
<td></td>
<td>Math</td>
<td>NS</td>
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**Notes:**

1. 
2.
### 3.8c Option-compulsory courses

Option: _____

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<th>Lec.</th>
<th>Lab/Tut.</th>
<th>Total AU</th>
<th>Math</th>
<th>NS</th>
<th>M+NS</th>
<th>CS</th>
<th>ES</th>
<th>ED</th>
<th>ES+ED</th>
<th>Other</th>
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#### Notes:

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### 3.8d Elective courses

To be used only in cases where electives are required to satisfy the minimum curriculum requirements in any category. If program and option-compulsory courses have already resulted in program curriculum requirements being satisfied, this table is not required.

Option: _____

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<th>Lab/ Tut.</th>
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<th>Math</th>
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**Notes:**

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### 3.8e Program totals

Option: _____

<table>
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<tr>
<th>Item</th>
<th>AC</th>
<th>Lec.</th>
<th>Lab/Tut.</th>
<th>Total AU</th>
<th>Curriculum components (AU)</th>
<th>“Legally authorized” AU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory common core courses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Math</td>
<td>NS</td>
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<tr>
<td>Program-compulsory courses</td>
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<tr>
<td>Option-compulsory courses</td>
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<tr>
<td>Electives</td>
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</table>
4. Reference Guidelines

**Document 1: Advanced Standing, Prior Studies, Exchange Studies, and Transfer Credit Regulations**

**Introduction**

Recognizing that students may receive academic credit for studies at institutions other than the one at which they receive their degree, or for study in another program offered at the same institution, the following regulations have been established.

1. **Definitions**

   1.1 Home institution: The degree-granting Institution that has requested GCREAS accreditation for an engineering baccalaureate degree program.

   1.2 Regular admission: Admission to the first post-secondary term of an engineering program at the home institution.

   1.3 Advanced standing: Admission to an engineering program at the home institution of students receiving academic credit, on a case-by-case basis, for equivalent studies at other post-secondary institutions or from non-engineering programs at the home institution. This type of admission applies to students who have either:

      a. transferred from another post-secondary institution or from a non-engineering program within the home institution, or

      b. completed a baccalaureate or higher-level degree or technology diploma program at the home or another post-secondary institution.

   1.4 Prior studies: Admission of students receiving academic credit, systematically, for studies at other post-secondary institutions. This includes admissions from an affiliated "feeder" institution system where formal arrangements exist whereby students may complete the first one or two years of a program at an associated university, college or other post-secondary institution. In these cases, the program for which accreditation is sought is designed to be a continuation of studies taken at the "feeder" institution(s), or alternatively, the program at the "feeder" institution has been designed to facilitate continuation of studies within the program for which accreditation is being sought.

   1.5 Exchange studies: Studies within a degree program, taken at an institution other than the home institution, with which there are formal and systematic arrangements for recognition of academic credit.

   1.6 Transfer credit: Academic credit granted, on a case-by-case basis, for equivalent studies completed at another post-secondary institution subsequent to admission to an engineering program at the home institution.
2. **General requirements**

2.1 The home institution must verify that the Accreditation Council curriculum content criteria are met by all students.

2.2 The home institution must ensure that students have demonstrated competence in the courses for which advanced standing, prior studies, exchange studies, and/or transfer credit is granted.

2.3 A validation procedure that is acceptable to the Accreditation Council must be in place for the awarding of advanced standing, prior studies, exchange studies, and/or transfer credit.

3. **Advanced standing, exchange studies, and transfer credit**

3.1 The institution must verify that the Accreditation Council criteria 4.5 to 4.11 are satisfied for students granted advanced standing, exchange studies, and/or transfer credit.

3.2 If advanced standing, exchange studies, or transfer credit is granted for engineering sciences or engineering design content, the home institution must verify that the curriculum content used for granting such credit:

   a. was given in a program environment that is consistent with criteria 5.6 and 5.7; and,
   b. if not taken at a program accredited by GCREAS Accreditation Council, was at, or above, the academic level and standard of the engineering program under evaluation.

4. **Prior studies**

4.1 A validation procedure referred to in article 2.3 above could be either:

   4.1.1 Demonstration that the home institution has control of, or periodically verifies the content and quality of, the "feeder" institution courses for which credit is granted by the home institution, that the quality and content of these courses meet acceptable standards, and when credit is granted for engineering sciences or engineering design content, that verification is consistent with article 3.2, herein above; or

   4.1.2 The observation and verification of prior studies credit by a secondary visit of the Accreditation Council visiting team to the "feeder" institution(s).

5. **Accreditation unit allowances**

The regulations provided in this section do not apply to academic credit allowed for advanced standing, prior studies, exchange studies and transfer credit from GCREAS accredited programs, or in the case in which program has been accredited by an institution with an agreement or mutual recognition with GCREAS.
5.1 A minimum of 1000 AU must be completed at the home institution, or a maximum of 900 AUs may be granted for the overall total of prior studies, advanced standing, exchange studies and transfer credit.

5.2 A minimum of 225 AU of engineering design, including the significant design experience as stipulated in Accreditation Criterion 3.3.4.4, must be completed at the home institution.

5.3 A minimum of 600 AU of engineering sciences plus engineering design must be completed at the home institution.
**Document 2: Interpretive Statement on Natural Sciences**

The inclusion of natural sciences in any engineering program is important for a number of reasons. Foremost, is the requirement for engineers to understand the physical world in which they work and live. Additionally, in order for engineers to better understand and communicate with colleagues who are employed in the scientific disciplines, it is vital that they have a solid background in the scientific method and scientific principles. Finally, the natural sciences form the foundation upon which much of engineering science and design is built.

There are fundamental differences between natural science and engineering science. The natural sciences include the exploration of the physical and chemical interactions of the natural world and the systematic observation and understanding of physical and natural phenomena through analytical and/or experimental techniques. The engineering sciences primarily involve the creative application of the principles developed through the natural sciences in the solution of engineering problems. As such, it is vital that all accredited engineering programs have a clearly identifiable natural science component. This can be accomplished in a number of ways and does not necessarily mean that all the natural sciences AUs need be in separate and distinct courses. Rather, the AU counted towards natural science must be readily and easily identifiable relative to the engineering science component. It is incumbent upon each engineering program to clearly identify the natural science component in their curricula.
Document 3: Statement of Interpretation on Licensure Expectations and Requirements

Accreditation Criterion 5.5 states:

The Dean of Engineering (or equivalent officer) and the head of an engineering program (or equivalent officer with overall responsibility for 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 jurisdiction in which the institution is located, based on the Reference Guideline #3 about licensure status.

Accreditation Criterion 5.7 states:

Faculty delivering curriculum content that is engineering science and/or engineering design are expected to be licensed to practice engineering in the jurisdiction in which the institution is located. This is based on the “Statement of Interpretation on Licensure Expectations and Requirements” (Document #3 from Reference Guidelines section).

In the determination of whether the professional engineering licensure situation is compliant with the criteria, the following are the expectations of the Accreditation Council:

1. All forms of engineering licensure in the country where the program is located are considered acceptable. Licensure in other countries is not considered to be equivalent to licensure in the country where the program is located.

2. In jurisdictions where teaching engineering at a university is legally defined as the practice of engineering, all faculty members shall be licensed in the jurisdiction of the institution offering the engineering program.

3. Examination of engineering licensure shall be restricted to that of faculty members and other instructors (adjuncts, part-time, etc.) teaching courses that include engineering science and/or engineering design curriculum content.

4. A minimum of 450 Accreditation Units (AU) of a combination of engineering science and engineering design curriculum content in an engineering program shall be delivered by faculty members holding professional engineering licensure as specified above.

5. A minimum of 225 AU of engineering design curriculum content in an engineering program shall be delivered by faculty members holding professional practice authorization.

6. For team-taught courses, and in the case of multiple sections of a particular course, the “weakest link” principle is considered, so the AUs will be considered “legally authorized” if all the teachers of the team or the different teachers of each section hold professional engineering licensure.
7. In order to ensure that engineering science, engineering design, natural science, mathematics and complementary studies curriculum contents are readily and easily identifiable, each course in an engineering program should be described using a maximum of three curriculum categories (ES, ED, NS, Math, CS, Other) with no single category constituting less than 25% of the total AU for a particular course.
Document 4: Statement of Interpretation on Curriculum Content for Options and Dual-Discipline Programs

The GCREAS Accreditation Council develops statements of interpretation to clarify the intent underlying certain key expectations which generate frequent inquiries and are not otherwise covered by the Accreditation Council accreditation criteria. The following statement of interpretation addresses the issue of curriculum content for options and dual-discipline programs.

In the interest of allowing for flexibility, the Accreditation Council has avoided a strict definition of the requirements for both program options and dual-discipline engineering degrees.

Typically, however, the Accreditation Council seeks the equivalent of one semester of subject-specific content in courses (engineering science and/or engineering design) as the basis for an option. Similarly, the Accreditation Council seeks a rough balance in subject-specific content between the two disciplines named in a dual-discipline program title, and the program must meet the Accreditation Council accreditation requirements for each discipline named.

For the purpose of accreditation, the preceding statement of interpretation should be respected in the development and maintenance of such offerings.
Document #5: Guidelines for the Preliminary Readiness Report

Before submission to GCREAS of a formal evaluation and accreditation request, an engineering program must first submit a Preliminary Readiness Report (PRR). The purpose of this statement, to be submitted no later than three months before the current application deadline, is to determine whether a program has defined and implemented essential processes that are necessary in order to be considered for an accreditation action. These processes must be in place (and producing relevant information) prior to submission of the accreditation application request.

Recall that all general criteria (and sub-criteria) defined by GCREAS must be satisfied in order for a program to be accredited. However, the PRR will focus on responses to questions related to four criteria as noted below. The response to each of the questions that comprise the PRR must be succinct (twenty pages or less for the whole PPR) and unambiguous.

CRITERION 2: Program Objectives

1. How were program constituents identified? Provide a list of meeting dates, attendees (no names, but rather a characterization of the attendee group), and decisions reached.
2. Are program objectives based on the needs of constituents? What process was used to determine these needs? Provide a list of meeting dates (to include meetings with constituents), attendees (see above), and decisions reached.
3. What process was used to determine that program objectives are consistent with the mission of the institution?
4. Are program objectives published and accessible by the public? Where are these objectives published?
5. What processes are used to determine that the objectives have been attained? (Note: the emphasis here is on processes, rather than actual results.)
CRITERION 3: Student Outcomes (Attributes of Graduates)

1. What documented processes are used to demonstrate that the established student outcomes are attained?
2. What documented processes are used to demonstrate that student outcomes lead to the attainment of program objectives?
3. How are the results of these processes used for continuous improvement?
4. Which what frequency these assessment processes are carried out?
5. How the results are documented and maintained?

CRITERION 4: Curriculum

1. Describes the plan of study for students including the course schedule that show the curricular path. State whether you are on quarters or semesters.
2. Describe how the curriculum aligns with the program educational objectives.
3. Describe how the curriculum and its associated prerequisite structure support the attainment of the student outcomes.
4. Describe how your program meets the requirements in terms of hours and depth of study for each subject area (Math and Basic Sciences, Engineering Topics and design, and General Education (Humanities, Social Sciences, Arts, etc.)
5. Describe the major design experience that prepares students for engineering practice. Describe how this experience is based upon the knowledge and skills acquired in earlier coursework, and incorporate appropriate engineering standards and multiple design constraints.

CRITERION 8: Continuous Improvement

1. What processes are used to provide evidence of actions that result in continuous improvement?
2. What processes are used to inform and obtain feedback from all program constituents?
3. Describe how the results of evaluation processes for the student outcomes and any other available information have been systematically used as input in the continuous improvement of the program.

4. Describe the results of any changes (whether or not effective) in those cases where re-assessment of the results has been completed.

5. Indicate any significant future program improvement plans based upon recent evaluations.

6. Provide a brief rationale for each of these planned changes.
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Introduction

As part of an accreditation process, an evaluation team nominated by the GCREAS Accreditation Council performs an evaluation visit to the academic program. This manual has information about the events that constitute the institutional evaluation visit. This information is directed both to the evaluation team and to the institution applying for accreditation. In the wake of the COVID-19 pandemic of 2020, GCREAS introduced in its procedures the optional modality of a virtual evaluation to be followed as an alternate procedure whenever the normal in-person evaluation is rendered not possible given equivalent emergency circumstances in the future. That alternate procedure will be subject to the following general stipulations.

A. **VIRTUAL EVALUATION: SCOPE AND EXPECTATIONS**

1.1 Due to the impact of the COVID-19 pandemic the GCREAS Accreditation Council has determined that, starting in 2020, teams will conduct all program evaluations virtually until the pandemic has officially been declared extinguished by the WHO.

1.2 A virtual evaluation has some noticeable differences from a traditional comprehensive evaluation that includes an on-site visit, in the following aspects:

   a. **Planning.** There will be no team travel to any on-site location. Teams will handle all planning, organization, and execution virtually.

   b. **Information Technology.** An agreement will be reached with the Institution on what will be the teleconferencing platform to be used during the virtual evaluation, subject to the requirements set forth in the GCREAS Manual for the Evaluation of Engineering Programs.

   c. **Materials.** All materials needed for the effective completion and execution of the program evaluation will be provided electronically (e.g. via E-mail, Dropbox, remote access, etc.). Evaluation teams will not request printed/USB/physical formats.

   d. **Facility Tours.** Programs will provide for virtual tours of the facilities or labs.

   e. **Interviews.** Teams will conduct all interviews of Faculty, Students, and Staff virtually.

   f. **Exit Meeting.** The Exit Meeting will occur virtually.

B. **COVID-19 IMPACT ON PROGRAMS AND THE GCREAS EVALUATION**

2.1 In the normal course of a GCREAS evaluation, team members make judgments based on the extent to which a program has provided evidence, throughout the evaluation process, of compliance with the applicable criteria, policies, and procedures.
2.2 We are now in unprecedented and challenging times. Therefore, GCREAS recognizes that programs reviewed during the 2020 Calendar have had to respond to particularly challenging circumstances and must continue to deliver their program of study. However, judgment is still to be based on the evidence a program provides that demonstrates compliance with the criteria.

2.3 Having said that, GCREAS understands and expects the need for programs to temporarily modify program delivery and make short-term accommodations for:

a. Faculty and administrative staff working remotely;

b. Courses transitioning to fully on-line modalities;

c. Laboratories being unavailable;

d. Grading Systems needing to change to pass/fail or some other variation;

e. Students needing to leave campus and continue their coursework in difficult circumstances; and

f. Data being difficult to collect and documentation difficult to produce.

2.4 GCREAS also understands and expects disruptions, such as, in data collection for input in a program’s continuous Improvement processes and difficulties in completion and documentation of the program’s 2019-2020 continuous improvement cycle.

2.5 It is critical that team members not base their judgment solely on the program's response to the COVID-19 crisis. Team members must judge the program based on compliance with the criteria. Teams must evaluate the program and its processes for compliance with the GREAS criteria as a whole, rather than using just a snapshot in time.

2.6 While maintaining the quality and integrity of an GCREAS evaluation, it is incumbent on all team members to exercise reasonableness.

2.7 The Self-Study Report, the supporting materials, the virtual facility tours, and the virtual interviews with faculty, students, and staff should help you understand the processes used by a program and provide the evidence needed to determine if the criteria have been satisfied.
1. GCREAS Accreditation Procedure

The Accreditation Procedure for GCREAS system shall consist of the following stages:

1. Application (w/Preliminary Readiness Report if applicable)
2. Self-evaluation report presentation
3. Evaluation team members nomination
4. Preliminary self-valuation report reviewing
5. Evaluation visit preparation (in person and virtual)
6. Evaluation visit (in person and virtual)
7. Visit report preparation
8. Accreditation recommendation
9. Accreditation decision and communication
10. Monitoring
11. Reconsideration or revisit (if applicable)
12. Informal evaluation or visit (if requested)

1. Application

Academic programs seeking accreditation must submit a Request for Evaluation, in this application they express their interest in following the principles and procedure established by GCREAS. Applications must include general information (including number of graduates and authorization for operation in the corresponding country) about the academic program and the institution. Representatives of the Academic program would have had to participate in the GCREAS events regarding introduction to the self evaluation study preparation and use of the tools described in said GCREAS events and Accreditation Manual. Programs seeking GCREAS accreditation for the first time will be required to present a Preliminary Readiness Report to substantiate
compliance with the minimum requirements stipulated by the Agency to enter said accreditation process. The report should be addressed to the Agency’s Accreditation Council, which will examine it and make a decision on whether the Program’s application would be accepted or not for any particular Accreditation Calendar.

2. **Self evaluation report presentation**

Once the application has been accepted, GCREAS agrees with the academic program about the delivery date for the self evaluation report. A self evaluation report must be prepared based on the established guidelines and it must be delivered at least four months before the visit.

3. **Evaluation team members nomination**

While the academic program conducts the self evaluation, the evaluation team will be formed, but only when the list of academic programs requesting accreditation is known. The corresponding consultant committee deliberates about the competences that are expected to be present in the team members and makes a recommendation to the Accreditation Council. The recommendation is made based on the relevant reference information and considering the minimum criteria established by the accreditation system as well as the specific characteristics of the academic program. Based on the consultant committee recommendation as well as the approval condition forming the basis for the application, the Accreditation Council determines team membership.

The Evaluation team is composed of a Team Chair and other two members, when one or two programs are to be evaluated in the same visit. When three or more programs are to be evaluated in the same visit, one evaluator will be added for each additional program. Team chairs and members can come from academic, governmental, private or industry sectors and one of them must be a national from the country in which the academic program is located.

The institution is allowed to propose a replacement to a member of the evaluation team if it is properly justified.

4. **Preliminary self evaluation report reviewing**

The Self Evaluation report is reviewed by the evaluation team. This review is intended to check its completeness and to provide members of the evaluation team to ask for additional information, if needed.
5. Evaluation visit preparation

The Team Chair oversees preparation of the on-site evaluation visit with other team members and academic program representatives. He or she proposes a date for the visit and a schedule of activities. In this stage visit organization aspects regarding evaluation team, as well as requirements for meetings are coordinated. In this phase of visit preparations, team member responsibilities as well as schedules for meetings are coordinated. Detailed instructions for the preparation of virtual visits are included on pages 116 through 123.

6. Evaluation visit

The Team Chair will organize call the evening prior to the first day of the visit. The usual agenda includes presentation of visit scheduling, procedures, task assignments and discussion of self-study report information and additional information presented by the academic program.

The on-site visit will last three days. During the visit, the evaluation team examines information and documentation about courses, tasks and projects made by students; tours facilities; and carries out a series of meetings and interviews with students, faculty and administrative staff in order to confirm that evaluation criteria are met. Team members also examine other key issues such as the academic atmosphere of the program and morale among faculty, staff and students.

Before the end of the visit, evaluation team members meet with the dean or, preferably, with academic program authorities in order to show results from the visit (strengths and weaknesses, shortcomings, areas of concern, and/or any other aspect of the program that could be considered of interest) Detailed instructions on how to conduct virtual visits are included on pages 124 through 135.

7. Visit report preparation and editing

During the visit, the evaluation team continues the preparation of the visit report that was begun prior to the visit. In this report they detail the main findings observed in the visit. Program authorities have the right to raise their comments regarding errors of fact within the seven days following the departure of the team from campus. The report is finished by the Team Chair in coordination with the other members within two weeks following the visit. Then it is sent to program authorities in order to allow the program to respond to findings reported by the team.
Based on the feedback provided by the institution, the evaluation team chair prepares final evaluation report that is sent to program authorities, to the consulting committee - if one has been established- and the GCREAS Accreditation Council. This report should include a preliminary recommendation concerning accreditation of the program.

8. Accreditation recommendation

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

9. Accreditation decision and communication

During an Accreditation Council Meeting, an evaluation final report is presented by the Team Chair. If a consulting committee has been established, it participates in the meeting and presents and justifies its accreditation recommendation.

Based on all the documentation that has been compiled during the process, but mainly on the on-site evaluation visit report and consulting committee recommendations, members from GCREAS accreditation council will reach an accreditation decision. The decision is communicated to the program by submitting in writing the final conclusion and the corresponding justification. A list of accredited programs is published and updated within the GCREAS website.

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

Accreditation can be awarded for shorter periods, subject to the implementation of a strict and verifiable improvement program. If the result of new subsequent evaluations requested by the program warrants it, accreditation can be enlarged up to the maximum period.

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 the accreditation possible.
Informal evaluation or visit (if requested)
By request from an institution, the 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. In the case of virtual informal evaluation visits, the same procedures are applicable as stipulated on pages through.

Evaluating team and academic program authorities feedback reports

In order to continuously improve the quality of the system, it is requested to the Dean of the academic program to submit a feedback report about the perception of the visit. The evaluators are also required to give their assessment of the team chair, and finally the team chair must evaluate the performance of the rest of the evaluators.
11. General flow-chart of the system.

1. Application presentation

2. Self evaluation report presentation

3. Self evaluation report analysis

4. Visit preparation

5. Designation of visit team

6. Accreditation visit


8. Accreditation recommendation

9. Accreditation decision and communication

1. Application presentation

2. Self evaluation report presentation

3. Self evaluation report analysis

4. Visit preparation

5. Designation of visit team

6. Accreditation visit


8. Accreditation recommendation

9. Accreditation decision and communication

11. Monitoring

Duration
1 year approx.

Preliminary Readiness Report (for 1st time Programs)
The general procedure stipulated above includes the specific steps, functions for each institutional stakeholder, and operational documents as described in the following diagram:
2. The Visiting Team

A visiting team consists of a Team Chair and two additional program specialist evaluators and observers (as required) whenever one or two programs are evaluated at the same time. Observers or extra visitors can participate as required. Specifically, for each additional program to be evaluated another member will be added to the Visiting Team. Visiting team members are senior engineers, from both the academic and non-academic sector; one of them must have broad professional experience. Two of them must be specialized in the same academic program that applies for accreditation, while the third evaluator will be specialized in the same or similar academic program, and must know about evaluation methodologies. One of the members must be from the country in which the program is located, while the rest must be from other Greater Caribbean Basin countries or other countries, but being fluent in the language of the academic program being accredited. They should not have a conflict with the program being evaluated.

Each member of a visiting team is a reporter who records information about the institution and interprets that information in order to help the Accreditation Council and the institution to assess the strong and weak points. The entire procedure is one of a confidential nature. Members of a visiting team are not authorized to make any comment regarding team findings except through regular Accreditation Council channels. The final accreditation decisions are made by the Accreditation Council.

**Visiting team chair**

This individual has overall responsibility for the accreditation visit. The team chair assigns duties to each team member as appropriate.

The team chair must be familiar with the previous reports and accreditation decisions related to the institution being visited. The team chair is also responsible for selecting the date of the visit in cooperation with the dean/designated official and arranging for the lodgings, meeting facilities and the schedule of visit events. The team chair ensures that the team members receive this information. The team chair has the responsibility for the overall preparation of the visiting team report and the submission of a consolidated team report to the Accreditation Council.

**Program specialized members**

The other members of the Visiting Team should be specialized in the branch of engineering of the programs being evaluated. They are expected to be broadly experienced in academic and professional sectors, but it is allowed to have a mix of specialists with mainly academic experience and specialists with mainly professional experience.
Additional evaluators and observers

While one additional evaluator will be automatically included in the Visiting Team per each additional program to be evaluated beyond two, the Accreditation Council can admit the inclusion of observers only when the Team chair and the institution being visited agrees with that.

3. Evaluation visit

In person evaluation visit

An evaluation visit normally spans over three days. It provides an opportunity for the visiting team to assess qualitative factors such as intellectual atmosphere and morale, professional attitudes and the quality of staff and students. The visit provides the opportunity for activities such as:

- Interviews with appropriate senior administrative officers including the president, the dean of engineering and the heads of the departments responsible for the academic programs.
- Interviews with individuals and groups of faculty members to evaluate professional attitudes, motivations, morale and the balance of opinions concerning theoretical and practical elements of the curriculum.
- Interviews with students.
- Interviews with employers.
- Interviews with parents of students.
- Interviews with graduates.
- Tours of physical facilities such as laboratories, libraries and computing facilities to evaluate their effectiveness.
- Review of documents (e.g. course outlines, test and examination papers, student transcripts, laboratory reports, senior projects, etc.) that constitutes evidence of student performance.
Before the end of the visit, the visiting team meets with the dean and, preferably, the heads of the departments responsible for the academic programs, to review the perceived strengths and shortcomings of the academic programs and to indicate issues identified for consideration.

**Afternoon or evening prior to the visit**

It is important that the chair of the visiting team calls the team together on the afternoon or the evening before the visit. At this first meeting, it is normal for the team chair to review with the members of the team the visit schedule, arrangements and assignments, and to discuss the information presented in the questionnaire and supporting documentation submitted by the institution. This meeting can also be scheduled for the early morning of the first day of the visit. This suggested arrangement implies, however, that the team has had a conference call or other similar meeting prior to the visit.

After reviewing all documentation, the team chair should outline the procedure for the visit and review visiting team member assignments. Items of uncertainty should be identified and plans made to address these items during the visit. In addition, assignments for service departments such as mathematics and physics, the library, the computing facilities and the complementary studies areas should be finalized. Although of interest to the entire team, the team chair is generally responsible for assessing the administration of the institution.

**First day**

Morning: The entire team should meet with the dean and department heads at the start of the visit. The team chair should conduct the meeting with the dean and department heads in such a way as to complete the meeting in about an hour. At this introductory meeting, schedules for the various team members to meet with their appropriate engineering and service departments should be confirmed. As appropriate, the dean should make arrangements for an interview with the president of the institution. Team members should proceed with their individual assignments immediately after this introductory meeting, starting with a private meeting with the appropriate department head. At this meeting the department head should provide an institutional overview.

Luncheon meeting: If the institution desires to provide a luncheon for the team it may do so on the first day. Very often this is a convenient time to have the team meet with the alumni, student leaders, and members of the external advisory committee.

Afternoon: Team members proceed with their individual assignments.

Evening: The team should assemble for or immediately after dinner. The discussion, usually requiring the whole evening of the first day, is very important. At this time, team members
review the findings that they have made with the other members of the team. They should discuss the strengths and the shortcomings found and cross-check with the other members. When unusual conditions are found by a team member, the chair must designate another member in order to make a cross-check during the following day morning.

Second day
Morning: Team members should complete the work on their individual assignments. As much cross-checking of other academic programs is done as the previous evening’s discussion warrants.

Luncheon: The team assembles in private for lunch on the second day. Team members discuss the findings, including strengths and shortcomings, which are to be included in their accreditation visit reports and at the report of team findings. The findings of the entire team, including the team chair’s findings, should be correlated and agreed upon by the team. Team members complete the preliminary report of their visit.

Afternoon: As a result of the agreement between the team members on their findings, as noted above, the entire team should meet with the dean (and, if agreeable to the dean, the department heads) to review verbally the findings of the team and to discuss the strengths and shortcomings observed. Normally, an exit briefing is provided to the institutional head.

Visiting team reports
The chair of the visiting team, working with the team members, prepares a report on the academic program(s) visited. This is a report of the team’s findings which includes: perceived strengths and shortcomings, areas of conformance to and deviation from the Accreditation Council criteria as interpreted by the visiting team, issues to consider (both for the present and for the future) and suggestions for improvement, if any. There is no accreditation recommendation in this report.

Each team member (excluding the team chair) completes the corresponding part of the accreditation visit report providing information on the member’s findings relative to the visit assignment. Team members should complete as much of this report as possible during the visit and provide the team chair with a copy so that he/she can review the findings at the end of the visit.

One week after the visit, team members are required to finalize their accreditation visit reports for attachment to the team chair’s consolidated visit report, the Report of the Visiting Team. The Report of the Visiting Team should not include any major findings not previously mentioned and revealed during the report of team findings. The visiting team chair prepares the Report of the Visiting Team describing the events of the visit, the findings of the chair’s portion of the visit, and a summary of the findings of the team members as detailed in their accreditation visit reports, which are included in the consolidated report. The Report of the
Visiting Team should be forwarded to the Accreditation Council Secretariat two weeks after the visit.

Once the report has been reviewed by the Accreditation Council, it is delivered to the institution in order to receive a reply (if needed) that will assure report accuracy. (Caution: as per GCREAS procedures, errors of fact should be reported to the Team Chair within seven calendar days after the visit.) After this reply is received, it is sent to team chair to make adjustments, if needed.

**Virtual evaluation visit**

Starting during the Pandemic COVID19 of 2020, GCREAS established optional procedures to perform *Virtual Evaluation Visits*, in lieu of the normal In Person Evaluation Visits, for mandatory application then and under all similar worldwide emergency circumstances that may, in the future, warrant their use.

The following are the guidelines concerning the preparation and realization of Virtual Evaluation Visits; as well as, the general requirements and necessary conditions.

**Guidelines for preparing a Virtual Evaluation Visit**

I. VIRTUAL EVALUATION PLANNING TIMELINE

   A. Planning guidelines

   1.1 All visits will be virtual, and are nominally scheduled to start in November 2020, and will be carried out in this manner until the COVID-19 pandemic is officially declared over by the WHO. Team Chairs (TC) are to immediately negotiate specific dates with institutions that are consistent with these guidelines.

       a. Virtual visits DO NOT need to conform to a standard 3-day visit schedule. TLs can work out an acceptable way to accomplish the objectives of a traditional review, but the “visit” should not extend beyond a one-week period.

       b. For a simultaneous virtual visit, it is necessary to ensure that these are conducted simultaneously.

       c. For a joint virtual visit, it is MANDATORY that teams involved in the review of programs, complete their reviews at the same time.

       e. To ensure a flatter demand of resources to support virtual visits, institutions that require large team visits (e.g. having >2 programs) should be scheduled after
January 2021, unless all parties (headquarters, team, institution) agree otherwise. Reserve March 2021 for overflow/contingency requirements.

f. GCREAS will not schedule or conduct virtual visits after the COVID-19 pandemic is officially declared over by the WHO.

B. Time zone

1.2 In a virtual visit, attention to time zones becomes more critical as members of the team on the situation could occupy multiple different time zones. To plan a virtual visit, consult the Time Zone World Map at https://dayspedia.com/time-zone-map/0/

II. VIRTUAL VISIT SCHEDULE (Day 0-n)

Resolving the timing of simultaneous GCREAS virtual visits

2.1 When more than one program is involved in the virtual review, the team leaders first determine in consultation with the institution, when the GCREAS teams will conduct the virtual visit.

A. Basic scheduling principles for the virtual visit

2.2 The goal is to conduct a virtual visit which achieves the same goals as a traditional on-site visit, recognizing that team members and institution representatives may be in different time zones.

2.3 Team members and institution representatives have all committed to the agreed-upon dates for the virtual visit and should be prepared to devote their time to the visit much like they would to a traditional visit. However, when creating the schedule, keep in mind that participants are at home, consequently they may not be able to dedicate entire days at a time to the virtual visit.

2.4 The terms “Day 0,” “Day 1” and “Day 2” refer to the traditional GCREAS on-site visit “Days” and their corresponding activities.

2.5 Day 0 is traditionally for reviewing display materials and conducted facility tours. For a virtual visit, teams should complete these tasks well before Day 0. The display materials should be made available 30 days prior to Day 0 and the review of the materials completed 14 days prior to Day 0.

2.6 Day 1 meetings may occur over a span or one or more days, depending on the overlap of time zones between the team members and the institution.
2.7 *Day 2* activities (working on statements and Exit Meeting) remain at the end of the virtual visit and might also require more than one day.

2.8 Once the schedule has been set, the team should plan to participate in all scheduled activities. While the virtual visit may extend beyond three days (but should not exceed five days), the schedule should not require team members to devote more hours to a Virtual Visit, than they would do to a traditional 3-day visit.

**B. Step 1 - determine the length of a virtual visit**

2.9 Determine if a three-day (typical timeframe) GCREAS virtual visit will be possible or if it will require additional days. To do this calculation, assume the same number and length of meetings and interviews as scheduled during a traditional on-site visit.

2.10 Typically, meetings occur between the end of the Dean’s presentation (or his equivalent) on *Day 1* (approximately 9 a.m.) and the end of *Day 1* (approximately 5 p.m.) with about an hour or two for lunch. This roughly equates to 6 hours of interview time.

2.11 For a virtual visit, you will need to factor in additional time in between meetings to allow for breaks or technical “glitches”. Therefore, plan on about 8 hours of interview and transition time per evaluator for your “*Day 1*” meetings, which may occur over one or more days.

2.12 Determine the number of hours per day that meetings can occur, so participants are engaging in conversations during a reasonable time of day in their respective time zone(s).

2.13 If the overlap of “reasonable” time of day for each of the participants only equals 3 hours, then you will need to plan to extend the virtual visit. Not all Peer Evaluator Volunteers (PEV) are required to attend all meetings together in in-person visits; therefore, individual PEVs can schedule meeting with different groups virtually.

2.14 Accommodate institutions, to the degree possible, and schedule meetings that work best for institutional Representatives, even if that means early or late meetings for the team members.

**C. Step 2: Mapping out the schedule for Day 0, Day 1, ... Day n**

2.15 Remember the guiding principles is the virtual visit ought to be as close to a traditional on-site visit as possible, though flexibility will be required to accommodate time zones difference.

2.16 Schedule a meeting ahead of time on *Zoom* or any other agreed-on teleconferencing platform.
1. **Day 0**

2.17 For a traditional on-site visit, *Day 0* would typically be a Sunday. For a virtual visit, you will need to schedule some of the typical *Day 0* activities in advance.

   a. **Prior to Day 0: team meeting**

2.18 This meeting could occur the morning of the virtual visit or the day/night, beforehand depending on the time zone or the members of the team. The purpose of this meeting is to get a sense of the shortcomings going into *Day 0*, prior to the official virtual visit.

2.19 Programs need to prepare recorded facility tools, prior to the virtual visit. If the campus is not accessible, or there is a stay-at-home order in place at the time of the virtual visit, PEVs can use the pre-recorded tools to make an initial determination on the program's compliance with *Criterion 6*. PEVs may request additional information if there are questions regarding the laboratory safety or operability of equipment. In addition to the pre-recorded facility tours, each program should plan to provide a “live” facility tour, if possible, from a cell phone or other device capable of streaming live contact to the PEVs.

   b. **Prior to Day 0: materials review**

2.20 Each program needs to provide access to the display materials no later than 30 days prior to *Day 0*. Each program needs to make a representative of the program available to answer questions related to the materials. If the materials are not entirely in English, the program needs to provide a translator. Schedule these sessions with program representatives for 2-hour windows of time, to complete the review of the materials no later than 14 days prior to *Day 0*.

   c. **Day 0: Team meeting**

2.21 After all team members have completed the facility tours and reviewed materials, the team should hold a second meeting to discuss the status of these programs. Depending on time zones, this meeting should have occurred prior to the start of *Day 1*.

   d. **Day 0: meetings with the Dean and program heads**

2.22 For virtual visits communication is critical to success. The Team Leader should plan on meeting with the Dean each day of a virtual visit and program evaluators should meet
with the heads of their programs, to keep everyone connected and to make sure there are no surprises.

2. **Day 1**
   
a. **Day 1: Dean’s welcome address, an overview (or equivalent)**

   2.23 Traditionally this is the Dean’s opportunity to address the team and share information about the institution, the college, and the program that the team will be reviewing. Plan to record the session for future references, if the Dean consents.

   b. **Day 1: Team Chair meetings.**

   2.24 Schedule meetings with appropriate institutional leadership and institutional units (e.g. Records and Registration, Finance, Career Services, Assessment, etc.) for as long as the “reasonable overlap” in time zones occurs, remembering to allow approximately 10 minutes between meetings, as a buffer in case of technical problems or needed breaks. Recognizing some virtual visits are going to have multiple “Day 1’s” to accommodate time zone differences, continue Team Leader meetings until the duration of meeting times has reached approximately 6 hours of total interview time.

   c. **Day 1: Program evaluator meetings.**

   2.25 Schedule meetings with the appropriate program individuals and supporting programs (e.g. Chemistry, Physics, Math, Computer Services, the Library, etc.) for as long as the “reasonable overlap” in time zones occurs, remembering to allow approximately 10 minutes between meetings as a buffer in case of technical problems or needed breaks. Again, since some virtual visits are going to have multiple “Day 1’s” continue Program Evaluator meetings until the duration of the meeting times has reached approximately 6 hours of total interview time.

   d. **Day 1: Meeting with the Dean and program heads.**

   2.26 If your virtual visit has multiple “Day 1’s” the Team Leader should plan on meeting with the Dean each day and program evaluators should meet with the heads of a program each day, to keep everyone connected and to make sure there are no surprises.

   e. **Day 1: Team meeting.**

2.27 At the end of all the Team Leaders and program evaluators meetings, schedule a Day 1 team meeting.
3. Day 2

2.28 If your virtual visit has multiple “Day 1’s” to accommodate time zone differences, plan on scheduling typical Day 2 activities at the conclusion of all Day 1 activities. Day 2 might also require multiple days to accommodate time zone differences and the availability of participants.

   a. **Day 2:** Answering lingering questions and working on statements.

2.29 Typically, the team uses the morning of Day 2 to get any new or lingering questions answered and to work on statements. Similarly, on the virtual visit the team and program chairs should reserve time for this purpose.

   b. **Day 2:** Team meeting.

2.30 In preparation for the Informal De-Brief and the Exit Meeting, the team needs to have a working meeting to assess each other's findings and make final refinements to the Exit Statement.

   c. **Day 2:** Informal Debrief meeting.

2.31 Schedule Debrief meetings for the program evaluators to meet with the program chairs, or the Team Chair to meet with the Dean.

   d. **Day 2:** Exit meeting.

2.32 Schedule an exit meeting with University leadership, the Dean, and the GCREAS team to present the Exit Statement.

   e. **To remember:**

      (i) The goal is to conduct a virtual visit which achieves the same roles as a traditional on-site visit, without sacrificing the quality and integrity of the review.

      (ii) The team should not devote more hours for a virtual visit than they would to a traditional 3-day visit.

      (iii) Expect the virtual visit to extend beyond three days.

      (iv) The virtual visit should not exceed 5 days.
Guidelines for performing a Virtual Evaluation Visit

I. DISPLAY OF SUPPORT MATERIALS

A. GCREAS requirements for support material

1.1 Note that the GCREAS requirement for support material are not different for virtual evaluations. The timing and methods of submission, organization, and presentation may be different.

1.2 Materials - Evaluators will review materials that are sufficient to demonstrate that the program is in compliance with the applicable criteria and policies. Much of this information should be incorporated into the Self-Study Report; additional evidence of program compliance may be made available to evaluators prior to and during the visit, using an on-line storage location. The program should make the following on-site materials available to the team during the visit, without duplicating materials provided in the Self-Study Report.

   a. Representative examples of graded student work, including when applicable, major design or capstone projects.

   b. Materials addressing the issues arising from the team's review of the Self-Study Report or online institutional materials.

   c. Documentation of actions taken by the program after submission of Self-Study Report, as being available for review during the visit.

   d. Materials necessary for the program to demonstrate compliance with the criteria and policies.

1.3 Evidence that the program educational objectives (PEOs) stated for each program are based on the needs of the stated program constituencies.

1.4 Evidence of a documented, systematically utilized, and effective process involving constituents, for periodic review of the PEOs stated for each program.

1.5 Evidence of the assessment, evaluation, and attainment of student outcomes (SOs) for each program.

1.6 Evidence of actions taken to improve the program.

1.7 Student Support Services to confirm adequacy of services appropriate to the institution’s mission and PEOs and SOs.
1.8 The process for certifying completion of a program and awarding of degree, including visits with persons responsible to ascertain that the process works as reported.

1.9 Note that the GCREAS does not require the display of textbooks. The textbooks can help program evaluators to better understand the rigor and breadth of coverage of a course. Also, the syllabi and the Self-Study Report should list text use and indicate the material the course covers. If necessary, the evaluator can Google a text to check its appropriateness for a course.

B. Other evidence of compliance with policies, procedures and criteria

1.10 Note that programs need not duplicate and resubmit documentation and supporting material submitted with the Self-Study Report.

a. Documentation of meetings at which faculty considered program improvements, based on assessment and evaluation of SOs.

b. Evidence of actions taken to improve with program based on:

c. The results of assessment evolution of SOs.

d. Input from other sources (e.g. faculty or industrial advisors)

e. Evidence, such as student work, that curricular elements specifically listed in Criterion 4 are covered.

C. Timeline for support materials

1.11 The Team Chair and the institution should discuss and agree upon when of the situation will make the support materials available to the team.

a. What you doing should be available at least one month prior to the start date of the virtual visit

b. Emphasize to institutions and PEVs that the team needs display materials early to identify and begin addressing resolving issues prior to the start of the virtual visit. Program evaluators should not plan to use the extra time for a more detailed examination of the support materials than they would ordinarily have time to do on Day 0 of a traditional on-site visit.

c. Teams AND programs benefit from clearing of communication and support materials issues before the team writes findings during the visit This is
specifically true during reviews where there is no on-site visit. It is truly a win-win.

d. It is difficult for teams and programs to resolve issues if materials are not available and reviewed until the start of the official visit. There will be more than enough to handle on Day 1 without scrambling to get answers to questions or support material.

1.12 Within 14 days from when the institutions make support materials available to the team, the team should review the materials and submit questions or issues to the program for resolution.

1.13 Programs should provide responses prior to the start of the virtual visit. If programs have trouble collecting or making information available, they should discuss this with the team.

D. Methods of making materials available

1.14 Do NOT ask the institution to mail physical materials or media.

a. Asking the institution to ship physical materials is an unreasonable burden.

b. Inserting a thumb drive from an external Source can pose risks to the TC/PEV

1.15 The TC should work with institutional representatives to determine where the material support for the virtual review would be located.

a. Institutional sites: OneDrive, Canvas, other LMS, etc.

b. Neutral third-party sites: Dropbox, Google drive, etc.

1.16 It is important to design a structure that allows the team to easily find what it needs.

1.17 Test the solution early to ensure that the team can readily access the materials.

1.18 Institutions may provide a sampling of graded student work which demonstrates the breadth and depth of topic coverage.

1.19 In the case of materials to support Criterion 8, teams could consider asking for samples of a material, which is not dissimilar to requesting a sample of transcripts, as we have always done.
a. Review of the Self-Study Report may indicate that the team would want to see documentation to support assessment, evaluation, and continuous improvement action for 3 or 4 randomly selected student outcomes.

b. If the program can successfully comply, the team may decide to move on. If not, the team could request additional material.

c. This approach will help relieve the burden for programs that do not currently have student work and other documentation available in electronic format.

E. Important considerations for teams in gaining access to electronic materials.

1.20 Early access to support materials is critical for success. Testing to ensure team access is critical in positioning the team to conduct this work.

1.21 Considerations for access to support materials.

a. Resolve security issues.

b. Remember confidentiality is important.

c. Ensure the institution organizes the materials for ease of access and understanding. Evaluators must be able to access all supporting materials effectively and early.

d. Work with institutions to allow team access. Institution security and IT people are sometimes weary of allowing outside access, even though the law allows access for official purposes such as accreditation.

1.22 If the institution stores the materials on a learning management system or some other document storage system, the TC should request training from the institution on accessing materials.

1.23 TC’s should have a specific point of contact at the Institution, for dealing with access and reviews of online support materials, to help resolve problems.

1.24 TC’s should work with the program, if certain materials are not available as originally planned, due to COVID-19 closures (e.g. examples of rated works from Spring 2020)

II. VIRTUAL FACILITY TOURS

A. Criterion 6 Requirements (harmonized) & common issues

1. Criteria 6 requirements (harmonized)
2.1 Classrooms, offices, laboratories and associated equipment must be adequate to support attainment of the student outcomes and to provide an atmosphere conducive to learning.

2.2 Modern tools, equipment, computing resources, and laboratories appropriate to the program must be available, accessible, and systematically maintained and upgraded to enable students to attain the student outcomes and to support program needs.

2.3 Students must be provided appropriate guidance regarding the use of tools, equipment, computer resources and laboratories available to the program.

2.4 The library services and the computer and information infrastructure must be adequate to support scholarly and professional activities of the students in faculty.

2. Common issues

2.5 Equipment needs upgrade, repair, or maintenance.

2.6 Students do not have access to appropriate modern equipment or tools.

2.7 Inadequacy of a space (e.g. lab, classroom) or its condition.

2.8 Spaces and equipment currently adequate, but reason to anticipate increased enrollment or current budgeting trends may jeopardize this.

2.9 Safety hazards or other laboratory operational issues.

2.10 Out-of-date Library facilities and holdings.

2.11 Issues with the adequacy of available facilities at a remote site.

B. Rationale, timing, & preparation for tours

1. Rationale for tours.

2.12 Programs/institutions describe labs, computing and other facilities in the Self-Study Report.

2.13 The reason for touring facilities is to visually verify the accuracy of a Self-Study Report, the safety of the equipment and work environment, the working condition of equipment, the atmosphere of the learning environment, etc.

2.14 Visual verification of information in the Self-Study Report is still necessary during the virtual visit.
2. **Timing of Tours.**

2.15 The team typically conducts facility tours on *Day 0* of a traditional on-site visit, when few students are around (e.g. Sunday)

   a. Touring on *Day 0* ensures the team will not disrupt classes and the program can address issues identified prior to the completion of the visit.

   b. During a virtual visit, view the facilities (e.g. narrated videos, live on-camera walkthroughs) early, so there is time to revisit labs, as necessary.

   c. Institutions should prepare pre-recorded, narrated videos, as soon as they have access to the facilities. Teams can use these to complete at least an initial review prior to what would be *Day 0*.

   d. Teams will prefer to participate in live, on-camera walkthroughs during or slightly before the scheduled review. But, should conditions restrict access to facilities, the teams can fall back on the pre-recorded narrated videos.

3. **Preparation for Virtual Tours.**

2.16 A virtual tour will require more planning than usual.

2.17 Identify potential shortcomings from the Self-Study Report and determine how you will need to evaluate them.

2.18 Prior to the virtual visit, work with the institution to identify the technology available and ensure the technology provides adequate video resolution and sound.

   C. **Virtual laboratory tour components.**

2.19 Annotated photographs: To help the PEV view and understand the various instruments or equipment used to support the program.

2.20 Narrated video using a smartphone.

   a. No more than 10 minutes/lab and one video/lab.

   b. A Walkthrough with two PEVs on the receiving end is representative of the type of narrated video that the team would need.

   c. Include the following:

      (i) Identify the name of the lab and physical location in building/on campus
(ii) Identify who uses the lab and the courses the lab supports.

(iii) Provide a general layout and views of the setting of labs.

(iv) Show safety equipment (PPE, eyewash stations, showers, first aid kits, fire blankets, SDS sheets, inspection reports etc.)

(v) Identify number of instructional experimental setups in the lab.

(vi) Show instructional equipment and supplies.

(vii) Provide the number of students working concurrently in the lab or on any single experimental station (capacity)

d. Live on-camera walkthrough, if feasible or as needed to verify compliance with the criteria.

(i) Consider recording these walkthroughs.

e. Correlation with the equipment list from the Shelf-Study Report.

D. Virtual classroom tour components.

2.21 Annotated photographs: to help PEV view and understand the various equipment available to support instruction.

2.22 Narrated video using a smartphone. Include the following:

a. Show bigger and smaller restrooms to give the team a sense for representative types of classrooms.

b. Show a regular whiteboard and a technology classroom, with associated audio-visual equipment.

c. Identify the courses that use the classroom.

d. Provide the capacity of the classroom.

e. Show typical instructor station.

f. Pan the classroom to provide a sense of its general condition.

2.23 Live on-camera walkthrough, if feasible or as needed to verify compliance with the criteria.

2.24 Correlation with the description from the Self-Study Report.
D. Virtual library and computer services tour components.

2.25 University web-site for Library holdings.

2.26 Annotated photograph.

2.27 Narrated video using a smartphone. Include the following:
   a. Holdings appropriate to support the program the team is reviewing.
   b. Textbooks.
   c. Reference materials for support of UG research and projects (e.g. engineering standards)
   d. Physical or electronic access
   e. Available software as appropriate to the discipline (e.g. analysis/modeling)
   f. Students study rooms and spaces.
   g. Student access.

2.28 Live, on-camera walkthrough, if feasible or as needed to verify compliance with the criteria.

2.29 Correlation with the description from the Self-Study Report.

F. Verifying facility conditions.

2.30 Build the composite picture using:
   b. University web-site.
   c. Annotate photographs.
   d. Narrated video tours.
   e. Live walkthroughs (if feasible)
2.31 Interviews with the following groups can provide a more comprehensive understanding of facilities available for the program.

a. Students.

b. Faculty.

c. Staff.

G. Tips for successful live walkthroughs.

2.32 Develop the pre-recorded videos as early as possible. If campus accessibility becomes a problem as the academic year progresses, you will have addressed this critical component of the review.

2.33 Where possible, use a smartphone (typically has a decent camera) rather than an iPod (awkward to hold) or a video camera (does not integrate with Zoom easily for a live broadcast).

2.34 Charge your phone before the tour. As an example: an hour-long video broadcast through Zoom consumes a fair amount of battery power.

2.35 Make sure you use landscape mode, rather than portrait mode for the video. It results in a better and larger image for the team to see.

2.36 Record the tour through chosen platform, so you can account for any video outages and there is an artifact the team can refer to later, as necessary.

2.37 Have Wi-Fi and LTE services turned on, so the phone has the best internet connectivity possible, to broadcast the tour with minimal degradation of video and audio.

2.38 Start each tour with a view of the signage for the space, so the team knows which space they are seeing and can relate that back to the Self-Study Report.

2.39 Move the camera slowly around the room. Since the frame rate is not particularly high, rapid movement will make it impossible for the team to clearly see what you are trying to show.

2.40 Provide a narrative as you walk through the tour, so that the team knows what you are showing. But, also listen for any comments and feedback from the team, as they may have requests for more details, or a close-up view of equipment, etc.
2.41 Be careful not to put your finger over the camera during the tour. Since it is an extended broadcast your hands will tend to get tired. Change the way you hold the phone to maintain comfort, but be careful not to accidentally obscure the camera.

2.42 Practice a tour with a team member prior to the virtual visit to make sure everything works smoothly.

H. Guidance to program evaluators

2.43 Pin the video in the chosen platform to the tour, so the image you see does not jump from one speaker to another during a discussion. You want the video to always show you the tour.

III. Information technology for Virtual Evaluations

A. Connectivity and system requirements.

1. System requirements.

3.1 You should find, in the on-line help facilities for chosen teleconferencing platform a detailed description of each of the requirements needed, and verify/share with the team and the institution those requirements, including:

   a. Bandwidth requirements.

   b. System requirements.

   c. Supported operating systems.

   d. Supported tablets and mobile devices.

   e. Processor and RAM requirements

   f. Supported browsers

2. Connectivity

   a. A wired connection will work better than wireless. Wireless is better than a mobile cellular signal. But, all of these will work
b. Enable all applicable modes (wired, wireless and cellular), so there is some redundancy, if signal strength changes with location.

3. Guidance to the institution.
   a. Identify all the spaces the team will use for the virtual visit – individual interviews, group interviews, exit interview, lab tours, other facility tours, etc.
   b. Conduct a walkthrough and test each space to verify reliable and stable connection.

B. Video conferencing platform
   1. Platform to choose

3.2 GCREAS is flexible to use any videoconferencing platform that is agreed with the Institution, provided that it allows for the following:
   a. Conference duration: 40 minutes for group meetings (at least for 11 meetings)
   b. A total of 100 participants.
   c. Any recording may be done locally on the computer.

3.3 All TCs must have free access to the videoconferencing platform chosen, with the facilities of extended meeting duration, large number of users, recording in the cloud, etc.

3.4 All PEVs must also have free access to the chosen videoconferencing platform

3.5 The steps to follow should include the following:
   a. Establish which platform the institution supports and adopt that platform, if secure.
   b. Contact GCREAS headquarters to determine how secure the platform is and, as necessary, for additional technical support with the platform.
   c. Ask the institution to provide access to information, training materials, and tests.
   d. Request institutional support in scheduling all meetings.
   e. The JE and the PEVs may use another platform for communications and work within the team.

2. Backup plans

3.6 Have the chosen platform installed on multiple devices (computer, tablet, smartphone)
3.7 Have phone numbers of institutional representative / program president / IT support and cell phone numbers for the continuity of operations, in case of power or service outages.

3.8 The following communication platforms can be used:

a. Zoom
b. Teams
c. Skype
d. FaceTime.
e. WhatsApp.
f. WeChat, etc.


3.9 GCREAS is aware of all the security issues that users of video conferencing platforms have experienced, but understands that several updates have recently improved their safety. In any case, it is recommended to take all possible and reasonable measures to protect virtual evaluations from possible attacks on the integrity and confidentiality of the processes.

3.10 Things you can do for the setting up of meetings to assure security:

a. Require password.

b. Use waiting room, which requires the meeting host to let participants in to the meeting.

c. Disable screen sharing for everyone.

d. Lock meeting, if needed (perhaps for Exit Meeting) This feature keeps new participants from joining the meeting.

e. Verify and manage participant list.

F. Encourage participants to not broadcast meeting details or password.

C. A/V Hardware, requirements

1. For the TL/PEV

3.11 A built-in or external camera is required.

3.12 Headsets are required as they significantly improve the quality of the conversation.
3.13 GCREAS will reimburse the TC up to $75 (including shipping and taxes) for a headset and Camera. Please submit itemized receipt for reimbursement.

2. For meetings

3.14 One-on-one meetings, such as interviews with institutional personnel and faculty, are easier to do. All participants will require a camera and are encouraged to use a headset for High Fidelity in communications.

3.15 Group meetings, such as meetings with student, advisory board, and the Exit Interview, require some thought.
   a. Determine if the participants will be on campus.
   b. Establish IT and Hardware requirements
   c. In-person groups where the participants are all together in one room will need a portable, shared microphone, conference phone, or similar device, for audio. They will also need an external speaker, for the TL/PEV to be able to hear.
   d. All participants in virtual groups will need cameras, and headsets are preferred.

D. Training

3.16 GCREAS headquarters will send out invitations to TCs to share with teams on best practices remote meetings.

3.17 GCREAS headquarters will schedule training sessions for TCs.

3.18 Headquarters can assist with training the team if necessary.

E. Testing of connection and platform

3.19 Schedule and conduct test with:
   a. The team as a whole.
   b. Institutional administrators, dean(s), faculty, staff, and students who will be involved.

G. Display of supporting materials

3.20 Display of supporting materials may take the form of documentation of assessment and evaluation, meeting minutes, capstone designs, course materials, etc.
3.21 Do NOT ask institutions to mail physical material o media
   a. Asking institutions to ship physical materials is an unreasonable burden.
   b. Inserting a thumb drive from an external source can pose risks to the TC/PEV

3.22 The TCshould work with institutional representatives to determine where material
   supporting the virtual evaluation visit will be located.
   a. Institutional sites: OneDrive, Canvas, other LMS, etc.
   b. Neutral third-party sites: Dropbox, Google Drive, etc.

9.23 It is important to design a structure that allows the team to easily find what it needs.

9.24 Test the solution early to assure individuals outside institution (i.e. the team) can readily
   access the materials.
Guidelines for special considerations during emergencies

I. SPECIAL EVALUATION CONSIDERATIONS: STARTING AT THE 2020-2021 CALENDAR

1.1 In circumstances such as those forced by the COVID-19 pandemic in 2020 and possible equivalents in the future, it is possible to encounter scenarios requiring the need for reasonableness and the application of special evaluation considerations, while maintaining the standard of confirming evidence of compliance with the criteria. What might those scenarios be? You may wish to itemize potential issues by Criterion; for example, some but certainly not all of the potential issues might be as follows [Note: though not in the list, there may well be issues with criteria C1 and C3]

a. **C2 - Program educational objectives**: The program was unable to involve program constituencies in the review of program educational objectives, as planned in the spring of 2020.

b. **C4 - Curriculum**: Curriculum materials available to the team are not as complete as they might have been, resulting in difficulty in determining the breadth and depth of fundamental and advanced topics; students in programs requiring a culminating project were not able to complete those projects.

c. **C5 - Faculty**: The number of Faculty available to support the program may seem to be insufficient, due to furloughs, layoffs and hiring freezes.

d. **C6 - Facilities**: The program did not provide evidence of adequate facilities, providing an atmosphere conducive to learning; you cannot tell if modern tools, equipment, computing resources, and laboratories are available and in good working order.

e. **C7 - Support and funding**: In the face of budget cutbacks, there are concerns about resources available to the program, including institutional services, financial support, and staff.

f. **C8 – Continuous improvement**: The program was unable to collect data as planned and the faculty could not meet for assessing and evaluating the data.

1.2 Each of these issues will require the exercise of reasonable judgment by the team. Two scenarios are presented for purposes of illustration

A. **Scenario 1: Outcomes assessment**

   1. **Scenario 1**

1.3 Many questions of judgment typically center around assessment and continuous improvement.
1.4 When such issues arise, ask (just as if you are doing a conventional review):

a. Are assessment processes adequate to determine extent of attainment of each of the outcomes?

b. Are assessment processes robust enough to identify strengths and weaknesses in student learning?

c. Are assessment processes sustainable?

d. Will assessment processes lead to program improvements, if appropriate?

e. Are the results of improvement actions evaluated?

1.5 In this scenario, the team observes the following relative to assessment of student outcomes attainment for a program:

a. The program collects data based on actual student performance for each outcome. The tools used demonstrate both knowledge and abilities.

b. The program limits assessments for student outcome attainment to a designated subset of 5 upper division required courses. The instructors of these courses prepare at least some of the assessment instruments according to guidelines and generate objective results, according to documented, measurable performance indicators and rubrics.

c. The data collected are well-documented and organized according to the percent of student achieving a satisfactory level of attainment for each performance indicator. The Faculty has provided thresholds for satisfactory attainment.

d. These assessment results indicate students are attaining each student outcome. There is however a gap in assessment results. The campus was closed from March 2020 to the beginning of the fall of 2020, so the program could not collect results for the spring of 2020.

e. When asked about the absence of data from lower-division courses, technical electives, and the remaining upper-division required courses, the program had said the faculty members supported the current process and were confident the process would identify any problem that might occur.

1.6 What would be your findings in this scenario? Are there any shortcomings you must cite? Scroll down for scenario 1 findings.
B. Scenario 1 findings

1.7 Basically there is no real problem in scenario 1

   a. Outcomes assessment in five upper-division, required courses complies with the GCREAS definition of Student Outcomes (Attributes of graduates; i.e. what students are expected to know and be able to do by the time of graduation)

   b. It is perfectly acceptable and even desirable to organize assessment results according to the performance indicators for each outcome. Measuring assessment results by performance indicator provides more diagnostic information about student learning.

1.8 Finding even a concern in this scenario is tenuous at best, because the criteria require only that there be a regular process effective in determining the extent of student outcomes attainment and the program uses the results of a continuous improvement process. There is nothing in this scenario to suggest this is an extraordinary case, except for the gap from March 2020 to the beginning of the fall of 2020, because of the COVID-19 health crisis.

C. Scenario 2

1.9 Another criterion often raising questions and potentially problematic issues in a virtual review is that of facilities, particularly with respect to the Laboratories.

1.10 When such issues arise, ask just as if you were doing a conventional review:

   a. Do students have access to appropriate modern tools, equipment, computer resources, and laboratories?

   b. Are tools, equipment, computing resources and laboratories systematically maintained and in good working order?

   c. Is the space adequate to provide an atmosphere conducive to learning? Is there evidence that students have received the necessary guidance and protective gear to safely use the tools, equipment and laboratories?

   d. Does the college or institution have procedures in place to provide for safety training and inspections?

1.11 In this scenario the team observes the following, relative to the condition of the laboratories used by the program.
a. The program has provided annotated photographs, narrated videos of the laboratories. These provide information on:

(i) The name of the labs and physical locations in buildings on campus;
(ii) Who uses the labs and the courses the labs support;
(iii) General layouts and views of the setting of labs;
(iv) Number of instructional experimental setups in the labs;
(v) Instructional equipment and supplies available; and
(vi) Number of students working concurrently in the labs or on any single experimental station (capacity)

b. The tools and equipment available to the students are modern.

c. Interviews with students confirm the tools and equipment are in good working order. They also report there is enough equipment, so lab teams do not have to be large and during normal times (non-COVID-19 times) they have no trouble getting access to what they need to complete their assignments.

d. When asked what the program did to enable student to complete laboratory work and attain related student outcomes during the COVID-19 crisis, the program head said each professor had handled it differently.

e. The photos and videos show the labs are sufficiently large, well-lit, clean, and organized, providing an atmosphere that is conducive to learning.

f. The team is unable to see appropriate safety equipment (e.g. PPE, eyewash stations, showers, first-aid kits, fire blankets, SDS sheets, inspection reports, etc.) in the photographs and videos.

g. When asked about the absence of evidence of safety equipment, the program lead had said it was an oversight in the preparation of the photographs and videos. Each lab had the requisite safety equipment, but he could not go back in to capture the evidence, as the campus was closed again due to a second surge in infections in the area.

1.12 What would be your findings in this scenario? Are there any shortcomings you must cite?
D. Scenario 2 findings

1.13 There are two issues in this scenario. The team needs:

   a. More information to determine how professors enable students to complete laboratory work and attain related student outcomes.
   
   b. Evidence of safety equipment in each of the other laboratories.

1.14 Unresolved. Each of these issues could result in a shortcoming, depending on the commission reviewing the program. The program could quickly resolve these during a traditional review, but the fact that this is a virtual review and the institution is closed, due to a second surge of infections, complicates the matter. If the program cannot provide the information within the time frame of the review, evaluators will need to make decisions about shortcomings that will not compromise the quality or integrity of the review. If a team decides to cite shortcomings, hopefully conditions will permit the program to address these during the 30-day due-process or post-30-day due-process periods.

II. REMOTE COMMUNICATION BARRIERS AND BEST PRACTICES

2.1 Guiding principles for communication best practices:

   a. Communicate early, effectively, and often
   
   b. The virtual nature of the review requires special attention to communication
   
   c. Understand the importance of clear, timely communication with all parties involved
   
   d. Keep the institution, the team, and GCREAS informed before, during, and after the virtual visit
   
   e. Schedule team meetings before and during the virtual visit, as you would for a traditional visit
   
   f. Schedule regular communication with the dean and the program chairs, before the virtual visit and each day of the virtual visit
   
   g. Clearly and tactfully communicate criterion-centered statements of findings and observations, as well as suggestions for continuous improvement

2.2 Barriers to effective communication:
a. Cultural differences
b. Language barriers
c. Physiological issues
d. PHYSICAL SEPARATION
e. Differences in perception/viewpoint
f. Attitudes/Emotional barriers
g. Attentiveness/Interest

_The single biggest problem in communication is the illusion that it has taken place - George Bernard Shaw_

A. _Tips to improve communication in video conferencing_

2.3 To preparation for a video conference do the following:

1. Determine your A/V hardware requirements

2.4 One-on-one meetings, such as interviews with institutional personnel and faculty, are easier to do. Participants will require a camera and are encouraged to use a headset, for high fidelity in communications.

2.5 Group meetings, such as meetings with students, advisory boards, and the Exit interview require some thought.

   a. Determine if the participants will be on campus
   
   b. In-person groups where the participants are all together in one room, will need a portable shared microphone, conference phone, or similar device for audio. There will also need to be an external speaker for the TC/PEV to be audible.
   
   c. Participants in Virtual groups will need cameras, and headsets are preferred.

2.6 Schedule and conduct tests of your equipment and connection with:

   a. The team as a whole
   
   b. Institutional administrators, dean(s), faculty, staff and students who will be involved
2.7 Bring in GCREAS headquarters if there are problems.

2.8 Orient your device so there is a clear, well-lit view of your face. The light source should be in front of you. Avoid being backlit, which means you should not have a window behind you.

2.9 Take a cue from newscasters. Make sure your face takes up no more than 1/3 of the screen.

2.10 Set the onscreen image you will be talking to as close to your camera as you can, so you look directly into the camera more naturally than what is off to the side.

2.11 Make sure your laptop or digital device is on a firm surface. Laptops held on legs or pillows will shake and make for an unsteady and distracting presentation.

2.12 If you use a virtual background, the preferred colors are neutral. Blue is always a favorite, but if you are encouraged to, download the GCREAS logo background. Keep in mind you will have to be very still, because of the digital halo that takes place when you move.

2.13 Declutter your workspace. Minimize open tabs, close email alerts, and put your phone on silent. This will also help with your own focus while working remotely.

2.14 For the sake of quality, use either a clip-on microphone or headset, to maximize your voice and avoid an echo of your voice on an open speaker, or if possible, use a noise-cancelling microphone.

2.15 Mute, which will help to reduce background noise and improve the quality of the audio. You may mute all but the speaker to avoid distractions. If you need to do something and you were just listening, you might mute your video, rather than distracting the audience. Also consider asking those in the audience to mute their video, particularly if they are having bandwidth problems.

2.16 While conducting the video conference:

   a. Create a system for acknowledging those who want to speak and/or ask questions. Use the raise hand function and/or chat function. Designate someone for the team to monitor these, so you can stay focused.

   b. Make sure your attire is professional and you are well-groomed. Just because you are home does not mean you should not take the usual steps to present a neat self.
c. Be mindful of what you say. Watch out for the “hot mic” moments and know you might be recorded, though GCREAS discourages the recording of meetings and interviews.

d. Try to be aware of your facial expressions

(i) Beware the tendency to let your face go slack when you are listening to someone talk. They can still see you. On the other hand, do not get too caught up in adjusting your facial expressions while you are speaking.

(ii) Practice active listening. Do not hesitate to nod with approval, just as if the person were in front of you.

(iii) Head tilt is always useful to communicate you are interested in what someone is saying.

e. Your upper body posture can also be important:

(i) Maintain an open body posture and do not be afraid to lean in, when someone is sharing something interesting;

(ii) Avoid hunching over your laptop or leaning far back in your seat. This gives an exaggerated impression of being tired and/or tense.

(iii) Firmly place your feet on the ground when available. Use a chair with an armrest or place your hands on the table in front of you.

g. GCREAS discourages the recording of meetings and interviews, but if you are going to record request permission first.

B. Interview principles: The art of asking questions.

2.17 As with the traditional review, you will be scheduling interviews with faculty, students, and staff. Be sure to:

a. Design all interview questions to elicit detailed responses. BEFORE the interview determine and clarify objectives and prepare the questions.


c. Avoid leading questions that assume an answer.

d. Prompt for specific information: “Can you give me an example?”
e. Turn interviewee into teacher: Can you explain that to me?

f. Ask an obvious question to establish interviewee as expert.

g. Periodically verify what you heard: Do I understand you to say...?

h. Remember: Maybe there is a reason SILENT and LISTEN shares the same letters.

C. Exit Meeting principles

*There will be an exit meeting that adheres to the basic principles of exit meetings conducted at the end of traditional reviews*

2.18 Be aware of two potential differences from Exit Meetings held at traditional reviews.

| a. Due to the virtual nature of the visit, the evaluation team must record its Closing Statement in writing. |
| b. Typically, the team would leave the Closing Statement with the Dean. The PEVs will now record their respective closing statements in writing with the TC, and the TC will send a consolidated version in writing to the Accreditation Council and GCREAS Headquarters. |

2.19 DO plan to adhere to the following basic principles of an Exit Meeting:

| a. You must have a complete Exit Statement that follow all GCREAS guidelines. |
| b. Remind the institutions that GCREAS requests they not record the Exit Meeting. |
| c. Read the statement verbatim without any deviation. |
| d. If questions are asked, answers must essentially re-state the Exit Statement without introducing new material. |
| e. All question should go to the Team Chair. |
| f. Always be courteous and respectful. |
| g. Thank the Institution for this hospitality and efforts to facilitate the virtual review. |

2.20 DO NOT DO any of the following during the Exit Meeting:

| a. Deviate from the written Exit Statement. |
| b. Make comments regarding aspects of the program or institution other than those in the Exit Statement. |
c. Compare the program or institution to your own.

d. Make disparaging comments about students or anyone else.

e. Disagree with other team members in any way.

f. Make any social conversation that could possibly be misinterpreted.

g. Arrive late or leave early.
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1. The accreditation visit report ......................................................................................... 148
2. Evaluation report structure ............................................................................................ 149
3. Criteria performance evaluation ..................................................................................... 150
Introduction

An accreditation visit report is prepared by the Team Chair by means of the contributions from the other team members. They deliver a preliminary report during the visit, prior to the Exit Briefing, and they prepare a draft report that is delivered to the Team Chair after the visit. This information is used by the Team Chair to prepare the visit final report.
1. **The evaluation visit report**

The evaluation visit final report is the most valuable technical resource to establish the accreditation decision. At the same time, it is a basic tool for the program’s continuous improvement process.

The report must not be limited to the answering of questions, but it also has to contain enough justified criteria to constitute the basis for the corresponding Advisory Committee - if one has been designated - and the Accreditation Council to make an evidence-based decision of accreditation.

Report quality is determined by the high level of experience and academic status of the team members, the evaluation process based on GCREAS criteria, the clarity of the guidelines, and the cooperative work among the members of the evaluation team, and among the evaluation team and faculty and support staff from the program.

The final version of the visit report must be a cooperative and preferably a consensus product. A preliminary report must be prepared prior to the visit final meeting. It is therefore recommended that the preparation of the report should start at the same time that evaluation team members receive the information delivered by GCREAS.

Recommendations proposed by evaluators in their final report must be well founded over valid reasons, and they must be considered like a tool for the improvement of the program.

- a) The final report may refer to coincidence points in the self evaluation report of the program. In this case, the points would in effect be an evidence of their relevance.
- b) If differences exist between evaluators and program responsible, the evaluation team members must argue their statements and recommend new trends to improve quality. Any recommendation implied in the findings of the visit report must be relevant, achievable, useful and coherent with the proposed goals.
2. Evaluation report structure

The report will consist of the following sections:

1. Cover
2. Table of contents
3. General information about the visit, including
   - Names, affiliation and responsibilities of each member of the team
   - Visit main events scheduling
   - Names and positions of interviewed people
   - Visited facilities list
4. Evaluation of each model criterion and related aspects
   - This consists of a series of judgments about each of the different criteria and aspects from the GCREAS evaluation model, based on the corresponding statements and qualification ranges.
5. General assessment of the program, including the following summary:
   - Most important strengths and weaknesses that were perceived. In the case of an accredited program applying for re-accreditation, it must be pointed out if the program has addressed the perceived weaknesses, while keeping the strengths.
   - Main suggestions from the team in order to achieve program improvement objectives, by prioritizing and correlating them with main strengths and weaknesses.
3. Criteria performance evaluation

In order to assess the degree of program responsiveness to the model criteria and aspects, the following ranges will be used.

When “Acceptable” or “Deficient” labels are used, they must be justified.

Ranges

DE: DEFICIENT. The evaluated item is not fulfilled and is therefore a deficiency of the program.

AC: ACCEPTABLE. The evaluated item is only partially fulfilled and represents a weakness of the program.

GD: GOOD. The evaluated item is only partially fulfilled but an increasing trend to strength is perceived. This partial fulfillment must be considered a concern for the program.

EX: EXCELLENT. The evaluated item is totally fulfilled and is a strength of the program.

Specific evaluation of criteria and evaluation aspects

A detailed evaluation first for each evaluation aspect (not including the different sections of the criteria detailed in the evaluation form, but the specific evaluation points for each evaluation criterion) and later for each criterion must be performed. In the case of assessments described as “acceptable” or “deficient”, justification should be provided.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>DE</th>
<th>AC</th>
<th>GD</th>
<th>EX</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1. Admission policies and procedures.</td>
<td></td>
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<td></td>
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<tr>
<td>1.2. Promotion and graduation policies and procedures.</td>
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</tr>
<tr>
<td>1.3. Counseling and guidance policies and procedures.</td>
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<tr>
<td>1.4. Student recruiting procedures</td>
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<tr>
<td>1.5. Control of students progress and evaluation of the academic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>performance in relation to program objectives</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
2. Program objectives

2.1. Consistency among program and institution objectives and their correspondence with attributes that are expected for graduates

2.2. Foundation of the objectives based on the needs of the different program constituent groups involved

2.3. Performance assessment for the objectives

3. Graduate attributes

3.1. Methods for the evaluation of the attainment of attribute.

3.2. Continuous improvement

4. Curriculum

4.1. Minimum curriculum content

4.2. The extent of design experience on completion of the program

4.3. Use of up-to-date engineering Tools

4.4. Lab experience

5. Faculty

5.1. Required status for the faculty

5.2. Number of full time and part time faculty members

5.3. Balance of duties for the faculty

5.4. Dependence of the program on just one faculty member

5.5. Leadership

5.6. Faculty experience and abilities

5.7. Extent of faculty with Legal authorization for engineering professional practice
5.8. Feedback to faculty

6. Facilities

6.1. Facilities and equipment

6.2. Use of Information Technologies (IT)

7. Support and funding

7.1. Continuing professional development program for faculty

7.2. Acquisition, maintenance and operation of facilities

7.3. Acquisition, maintenance and operation of equipment

7.4. Support and service staff

8. Continuous improvement

8.1. Feedback procedures and tools

8.2. Improvement actions

8.2. Interaction with stakeholders

---

**Additional Commentaries:**

- “Deficient” or “Acceptable” findings should be justified here.

**Program global assessment**

Complete the following table with a summary for each of the criteria evaluation formerly carried out.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>DE</th>
<th>AC</th>
<th>GD</th>
<th>EX</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Program objectives</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3.</td>
<td>Graduate attributes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Curriculum</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5.</td>
<td>Faculty</td>
<td></td>
<td></td>
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<tr>
<td>6.</td>
<td>Facilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Support and funding</td>
<td></td>
<td></td>
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<tr>
<td>8.</td>
<td>Continuous improvement</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Commentaries:**

- “Deficient” or “Acceptable” findings can be qualified here.
UNIVERSITY CHECKLIST FOR THE PREPARATION OF THE EVALUATION VISIT

The following is a proposed checklist to be prepared by the university applying for GCREAS accreditation

<table>
<thead>
<tr>
<th>Task</th>
<th>Status</th>
<th>Fulfillment date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrangement of the dates of the visit with the team chair</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schedule approval</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation of anonymous copies of students' transcripts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation of documentation that supports criteria compliance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(tests, student work, lab manuals, text books, teaching material,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>detailed information about faculty)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation of information requested by evaluators to be made</td>
<td></td>
<td></td>
</tr>
<tr>
<td>available at the time of the visit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation team members travel arrangements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation team members’ accommodation arrangements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivery of information regarding location of town and campus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meeting room arrangements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrangement of meeting room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>with computer printer and other resources for the team</td>
<td></td>
<td></td>
</tr>
<tr>
<td>meeting room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Announcement to the faculty in order to get ready for meetings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call for meetings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation team members’ meal and lunch arrangements.</td>
<td></td>
<td></td>
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<tr>
<td>Evaluation team members’ transportation arrangements.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FORMAT OF PRELIMINARY REPORT FOR THE INSTITUTION

The preliminary report will contain a description for the methodology applied in the evaluation visit and the main results, including strengths and weaknesses corresponding to criteria as follows:

- Methodology used during the visit

Indicate facilities visited, interviews with authorities, faculty, technical and support staff, graduates, employers and other constituents and documentation reviewed based on the visit schedule.

- Main results

Strengths

Criteria

1. Students
2. Program objectives
3. Graduate attributes
4. Curriculum
5. Faculty
6. Facilities
7. Support and funding
8. Continuous improvement

Weaknesses

Criteria

1. Students
2. Program objectives
3. Graduate attributes
4. Curriculum
5. Faculty
6. Facilities
7. Support and funding
8. Continuous improvement
VISITING TEAM MEMBER PERFORMANCE EVALUATION FORMAT

Team member: ________________________________________________________________

Institution visited: __________________________________________________________

Visit dates: __________________________________________________________________

Assignment:

☐ Team chair

☐ Member of the team

Name of the visited program:

Was this the team member’s first evaluation? ☐ Yes ☐ No

What is the language of the program?

Fluent in the language of the program: ☐ Yes ☐ No

<table>
<thead>
<tr>
<th>Evaluation of the different aspects of the visit</th>
<th>Excellent</th>
<th>Good</th>
<th>Bad</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interest in the process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Preparation for the visit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Cooperation with other team members</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4. Contribution to the team</td>
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<tr>
<td>5. Report punctuality</td>
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</tr>
<tr>
<td>6. Report quality</td>
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<tr>
<td>7. General performance according to assigned function on the team</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Did you work with this evaluator on another evaluation visit?

Yes ☐ No ☐

Commentaries:

Prepared by ................................................................. Date...............................

Position................................................................. E-SIGN (if available)
VISIT EVALUATION FORMAT BY THE PROGRAM HEAD

In order to help GCREAS to maintain its commitment to quality and continuous improvement, it is requested to the head of the academic program applying for accreditation to complete this form. It must be submitted as soon as possible to

Greater Caribbean Regional Engineering accreditation System

(To the attention of:  )

Santo Domingo (Dominican Republic)

GCREAS hereby states that the information provided in this form will be treated with complete confidentiality. Likewise, in any case the information provided will be used during the academic program evaluation process, as well as to modify any prior accreditation decision.

NAME OF THE INSTITUTION

PROGRAM VISITED

INSTITUTION POINT PERSON FOR THE VISIT

VISIT DATES

EVALUATION DATE

Assess the performance level of the evaluating team using a range from 1 (deficient) to 5 (excellent) for each of the following aspects
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction between the institution’s point person for the visit and the team chair before the visit</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Level of detail and requirements during the examination of program materials</td>
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<tr>
<td>Understanding of specific and unique program features</td>
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<tr>
<td>Impartial treatment of the different participants</td>
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</tr>
<tr>
<td>Quality of the report delivered by the team alter the visit</td>
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<tr>
<td>Quality of the visit</td>
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<td></td>
</tr>
<tr>
<td>Organization</td>
<td></td>
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<tr>
<td>Development</td>
<td></td>
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</tr>
</tbody>
</table>

Please provide your assessment of overall team effort.

Please provide an assessment of your interactions with accreditation system staff

Please provide your assessment of accreditation processes that have been considered POSITIVE.
Please provide your assessment of accreditation processes that have been considered NEGATIVE.

Please describe any problem or inconvenience that occurred during the visit.

Please give any suggestions that you consider important in order to improve accreditation processes.

Please give any other commentaries that you find helpful.
EXAMPLE OF SCHEDULE OF ACTIVITIES DURING ACCREDITATION CYCLE

This calendar contains an example for activities scheduling prior, after and during the external evaluation visit itself.

<table>
<thead>
<tr>
<th>Date (Examples)</th>
<th>Activity</th>
<th>Carried out by</th>
</tr>
</thead>
<tbody>
<tr>
<td>First annual call for applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July-December, 2021</td>
<td>Participation in annual meetings regarding self evaluation process and tools.</td>
<td>Program representatives, members from the self evaluation committee</td>
</tr>
<tr>
<td>January, 2022</td>
<td>Program submits application for accreditation or Preliminary Readiness Report</td>
<td>Dean or corresponding authority</td>
</tr>
<tr>
<td>January – June, 2022</td>
<td>Evaluation team members nomination</td>
<td>Accreditation Council</td>
</tr>
<tr>
<td>February – April, 2022</td>
<td>Self evaluation report is delivered</td>
<td>Dean or corresponding authority</td>
</tr>
<tr>
<td>April, 2022</td>
<td>Request for additional information</td>
<td>Evaluation team members</td>
</tr>
<tr>
<td>April – May, 2022</td>
<td>Additional information is provided</td>
<td>Dean or corresponding authority</td>
</tr>
<tr>
<td>January – July, 2022 (if visit is in July) / January – September, 2022 (if visit is in September)</td>
<td>Evaluation visit preparation</td>
<td>Evaluation team members and self evaluation committee representatives</td>
</tr>
<tr>
<td>July, September, 2022</td>
<td>Evaluation visit</td>
<td>Evaluation team members</td>
</tr>
<tr>
<td>July – August, 2022 (if visit was in July) / September – October, 2022 (if visit was in September)</td>
<td>Evaluation visit report preparation and submission</td>
<td>Evaluation team members</td>
</tr>
<tr>
<td>September, 2022 (if visit was in July) / November, 2022 (if visit was in September)</td>
<td>Accreditation recommendation</td>
<td>Consultant Council</td>
</tr>
<tr>
<td>October, 2022 (if visit was in July) / December, 2022 (if visit was in September)</td>
<td>Accreditation decision</td>
<td>Accreditation Council</td>
</tr>
<tr>
<td>Date (Examples)</td>
<td>Activity</td>
<td>Carried out by</td>
</tr>
<tr>
<td>----------------</td>
<td>----------</td>
<td>---------------</td>
</tr>
<tr>
<td><strong>Second annual call for applications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>January-June, 2022</td>
<td>Participation in annual meetings regarding self evaluation process and tools.</td>
<td>Program representatives, members from the self evaluation committee</td>
</tr>
<tr>
<td>July, 2022</td>
<td>Program applies for accreditation</td>
<td>Dean or corresponding authority</td>
</tr>
<tr>
<td>July – December, 2022</td>
<td>Evaluation team members nomination</td>
<td>Consultant Council (criterion) and Managing Council (decision)</td>
</tr>
<tr>
<td>August – October, 2022</td>
<td>Self evaluation report is delivered</td>
<td>Dean or corresponding authority</td>
</tr>
<tr>
<td>October, 2022</td>
<td>Requirement of additional information</td>
<td>Evaluation team members</td>
</tr>
<tr>
<td>October – November, 2022</td>
<td>Additional information is provided</td>
<td>Dean or corresponding authority</td>
</tr>
<tr>
<td><strong>July, 2022 - January, 2023 (if visit is in January)</strong> <strong>July, 2022 – March, 2023 (if visit is in March)</strong></td>
<td>Evaluation visit preparation</td>
<td>Evaluation team members and self evaluation committee representatives</td>
</tr>
<tr>
<td><strong>January, March, 2023</strong></td>
<td>Evaluation visit</td>
<td>Evaluation team members</td>
</tr>
<tr>
<td><strong>January – February, 2023 (if visit was in January)</strong> <strong>March – April, 2023 (if visit was in March)</strong></td>
<td>Evaluation visit report preparation and delivering</td>
<td>Evaluation team members</td>
</tr>
<tr>
<td><strong>March, 2023 (if visit was in January) / May, 2023 (if visit was in March)</strong></td>
<td>Accreditation recommendation</td>
<td>Consultant Council</td>
</tr>
<tr>
<td><strong>April, 2023 (if visit was in January) / June, 2023 (if visit was in March)</strong></td>
<td>Accreditation decision</td>
<td>Accreditation Council</td>
</tr>
</tbody>
</table>
EXAMPLE OF DETAILED PROGRAM FOR THE VISIT

This is an example of the Schedule for a visit with three evaluators: a team chair and two additional program specialists. The schedule is designed for a three-day visit, even when the first day there is only a first evaluation team meeting and program documentation is reviewed. The instructions provided in this Manual to prepare for the modality of virtual evaluation visits can significantly change this detailed program. See guidelines on pages 116 through 121.

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Chair</th>
<th>Program specialist N 1</th>
<th>Program Specialist N 2</th>
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<tbody>
<tr>
<td><strong>Sunday</strong></td>
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<tr>
<td>12:00-14:00</td>
<td>The team has a first meeting in the hotel</td>
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<td>14:00-17:00</td>
<td>There will be a reviewing of program documentation (student work, tests, etc).</td>
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<td><strong>Monday</strong></td>
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<tr>
<td>8:00 – 8:15</td>
<td>The visit begins. University and Program authorities will be introduced</td>
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<tr>
<td>8:15 –9:15</td>
<td>Meeting with the Dean of engineering</td>
<td>Meeting with academic program responsible</td>
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<tr>
<td>9:15–10:00</td>
<td>Meeting with University Rector</td>
<td>Visit of engineering labs, computer facilities, workshops</td>
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<td>10:00–12:15</td>
<td>Meeting with University authorities (Research Vice-Rector, Academic Vice-Rector, Administration and Financial Vice-Rector)</td>
<td>Meeting with professors involved in certain aspects of the curriculum, like engineering design, first, medium and last year courses (better if in individual way, but it can be by group).</td>
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<tr>
<td>12:15–13:00</td>
<td>Informal lunch with Dean of engineering</td>
<td>Working lunch with program head and other program managers</td>
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<tr>
<td>13:00–15:30</td>
<td>Meeting with University authorities (Dean of Science, Vice-Rector, head of student affairs, Registration head, among others).</td>
<td>Meeting with professors involved in certain aspects of the curriculum, like engineering design, first, medium and last year courses (better if in individual way, but it can be by group). Meeting with engineering association members.</td>
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<td>15:30–16:15</td>
<td>Visit to the library. Meeting with support staff.</td>
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<td>Time</td>
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<tr>
<td>16:15–17:15</td>
<td>Meeting with students from different years participating in special events</td>
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<td>17:30</td>
<td>Return to hotel</td>
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<tr>
<td>18:00–20:00</td>
<td>Dinner</td>
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<tr>
<td>20:00–23:00</td>
<td>Meeting in the hotel</td>
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<td><strong>Tuesday</strong></td>
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<tr>
<td>8:00–8:30</td>
<td>Meeting with University authorities</td>
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<tr>
<td>8:30–9:00</td>
<td>Meeting with lab and teaching assistants.</td>
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<td>9:00–9:30</td>
<td>Meeting with technical staff</td>
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<td>9:30–10:15</td>
<td>Meeting with administration staff, secretariat staff and student counselors</td>
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<td>10:15–11:00</td>
<td>Meeting with graduates</td>
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<td>11:00–11:45</td>
<td>Meeting with employers</td>
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<tr>
<td>11:45–12:15</td>
<td>Meeting with head of engineering dept</td>
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<tr>
<td>12:15–13:00</td>
<td>Lunch</td>
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<td>13:00–15:00</td>
<td>Evaluation team meeting and preparation of visit findings report</td>
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<tr>
<td>15:00–16:00</td>
<td>Presentation of visit findings report to program and University authorities</td>
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<tr>
<td>16:00</td>
<td>Return to airport or hotel</td>
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**Example of visit questions to professors, students, graduates, employers, parents and administrative staff**

The following are typical questions which may be posed to faculty, students and administrators during the academic program visit by the evaluation team.

The following questions must be answered by the use of one of the following terms: (E)xcellent, (G)ood, (A)cceptable, (D)efficient, whenever possible. In other case please use adequate explanations.

**Authorities and Administrators**

1. Which is the type of relationship between program faculty and the rest of faculty? (E – G – A – D)
2. How is program mission related to the institutional mission and program faculty mission? (E – G – A – D)
3. How would you describe funding availability? (E – G – A – D) What about opportunities?
4. What is the general perception about the projections for enrollment and Budget? (E – G – A – D)
5. What commitments have been made regarding physical space, staff and Budget?
6. How would you describe the ratio of time sharing between teaching and research for engineering faculty? (E – G – A – D)
7. How are the relationships between the engineering unit and support unit? (E – G – A – D)
8. What are the expectations of the University in terms of the role of the engineering program?
9. How would you describe the trend that is being carried out by the engineering faculty and its programs?
10. What are the main external factors affecting the University? How are they connected to the engineering program?
11. What is the most important challenge for the University?
12. How would you describe the relation between engineering programs and the mission of the institution? (E – G – A – D)
13. From your point of view, what are the main problems for engineering programs?
14. How would you describe the degree of anticipation by the program head and other managers about emerging opportunities? (E – G – A – D)
15. Has the university any type of Consultant Council for industry related matters? (Yes – No)
16. Is there any type of design or improvement plan on the horizon? (Yes – No)
Students

1. How would you describe the program difficulty? (E – G – A – D)
2. Which is the hardest course / module?
3. Which is the easiest course / module?
4. To what extent do you expect the program is instructing you in order to become an engineer? (E – G – A – D)
5. What do you think is the main characteristic of an engineer?
6. To what extent are you satisfied with the quality of the education? (E – G – A – D)
7. Do you think that the program is well managed by the department? (Yes – No)
8. How would you describe how student counseling work?
9. How would you assess student admission, promotion and monitoring policies? (E – G – A – D)
10. Have you participated in the development or evaluation stages for a teaching program? (Yes – No)
11. How would you assess the formal evaluations of courses? (E – G – A – D)
12. How would you describe the correspondence between the numbers of credits for each course with the corresponding workload? (E – G – A – D)
13. What is your opinion of the engineering design component of the program? (E – G – A – D)
14. Have you adequate access to computer facilities? (Yes – No)
15. Are the laboratories well equipped and maintained? (Yes – No) Are they up-to-date? (Yes – No)
16. What is your assessment of lab teaching assistants? (E – G – A – D)
17. What is your opinion about humanities courses? (E – G – A – D)
18. Are the courses in physics, chemistry, mathematics and business really useful and interesting? (Yes – No)
19. How would you assess your opportunities to develop and practice communication skills, both in oral and written ways?
20. Have you had exposure to a professional engineering association? (Yes – No) How did you get to know about it? What do you know about it?
21. To what aspects of laboratory safety and occupational health and safety have you been exposed? (E – G – A – D)
22. Do any of you plan to go to grad school? (Yes – No)
23. What do you like most about being a student in this program?
24. What do you like least about being a student in this program?
25. What would be your suggestions for change, if any?
26. How much contact is there between engineering and non engineering students? Does the University administration endeavor to create mixed or separate classes?

27. How do students communicate with the faculty if there are concerns? Has there been a good record of results?

28. How do students regard the course evaluation process? What about the rate of participation, effectiveness? (E – G – A – D) Is there any type of feedback? (Yes – No)

29. What do students know about faculty research programs and other engineering disciplines? How would you qualify their level of knowledge? (E – G – A – D)

30. What knowledge are you given on the business side of engineering practice? (E – G – A – D)

31. What is design?

Faculty

1. How would you describe students’ attitudes towards the contents of the engineering program? (E – G – A – D)

2. What is the level of effort of the students?

3. What is your opinion about institutional policies regarding the following: hiring, promotion, professional development and job stability? (please answer with separate qualifications for each item) (E – G – A – D)

4. What is your opinion about your remuneration (academic salaries)? (E – G – A – D)

5. How would you describe the way in which professors’ opinions are considered for the improvement of the program? (E – G – A – D)

6. How could you describe the job atmosphere? (E – G – A – D)

7. What level of participation do you have in activities regarding curriculum improvement, research and engineering program administration?

8. What is your level of exposure to professional, scientific and/or academic associations?

9. Please give the names of professional, scientific and engineering publications in which you have collaborated?

10. What is your level of experience both in academic (teaching, research) and professional (industry, design) sectors? (please answer with separate qualifications for each item)

Graduates

1. Taking into account your present level of knowledge and expertise about engineering practice and getting in touch with colleagues from other institutions. How would you describe the degree of difficulty of the program from which you have graduated? (E – G – A – D)
2. Have the hardest courses within the program provided an advantage when working? (Yes – No)
3. Have the easiest courses within the program created a disadvantage when working? (Yes – No)
4. What do you think is the differentiating element of an engineer? Does the program help you to have this flair? (Yes – No)
5. According to your professional experience, what is your opinion about the curriculum design component? (E – G – A – D)
6. What is your assessment of the communications skills taught during the program? (E – G – A – D)
7. Do you believe that the program has helped you in acquiring abilities regarding continuous and interdisciplinary learning? (Yes – No)
8. Do you consider that any type of disconnect exists between program curriculum and the usual tasks developed in industry? (Yes – No). If you answered yes, how would you describe them?
9. Do you consider that the design of the program can cause difficulties when searching for a job? (Yes – No). If you answered yes, what do you think is the reason?
10. Do you consider that the design of the program promotes the creation of abilities regarding team work? (Yes – No). If you answered yes, what is the most noteworthy aspect? If you answered no, what are the shortages?
11. Do you consider that the design of the program promotes the creation of abilities regarding engineering problems solving? (Yes – No). If you answered yes, what is the most noteworthy aspect? If you answered no, what are the shortcomings?
12. What are your suggestions for improving the program, if any?

Employers

1. Considering your experience hiring graduates from the program, do you consider that the most important courses require an adequate level of effort? (Yes – No)
2. What do you think is the differentiating element of an engineer? Does the program help the graduates to have this flair? (Yes – No)
3. According to your perception regarding your employees’ performance, what is your opinion about the curriculum design component? (E – G – A – D)
4. What is your assessment of program standards regarding both oral and written communications? (E – G – A – D)
5. Do you believe that the program has helped your employees in acquiring abilities regarding continuous and interdisciplinary learning? (Yes – No)
6. Do you consider that any type of disconnect exists between the program curriculum and the usual tasks developed in industry? (Yes – No). If you answered yes, how would you describe them?

7. Do you consider that the design of the program promotes the creation of abilities regarding team work? (Yes – No). If you answered yes, what is the most noteworthy aspect? If you answered no, what are the shortcomings?

8. Do you consider that the design of the program promotes the creation of abilities regarding engineering problems solving? (Yes – No). If you answered yes, what is the most noteworthy aspect? If you answered no, what are the shortcomings?

9. What are your suggestions for improving the program, if any?

Parents

1. What is, in general terms, your assessment of the education received by your son / daughter? (E – G – A – D)
2. Do you believe that this education is going to help (or has helped to) get a job easier or harder than the average population?
3. If any or both of you are engineers or have an engineering related job, what do you consider as positive and / or negative aspects regarding your son / daughter education?
4. In the case that the program that has been taught (or is being taught) to your son / daughter involves a bigger cost than another one available in your territory, what is your assessment of this cost? (E – G – A – D)