



Institution of Engineers Mauritius

***“CRITERIA FOR ACCREDITATION OF ENGINEERING  
DEGREE PROGRAMMES MEETING STAGE-1 OF  
CRPE REGISTRATION REQUIREMENTS”***

**by**

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## Purpose of EAB-A03-P

Accreditation criteria are the **generic set** of requirements (based on standards defined in EAB-A02-P) that, when fully met by a programme, indicate that the programme is of **adequate quality**, including the **curriculum, learning outcomes** achieved (i.e. meeting the **Graduate Attributes**), educational **process, resourcing** and **sustainability** for the intended purpose.



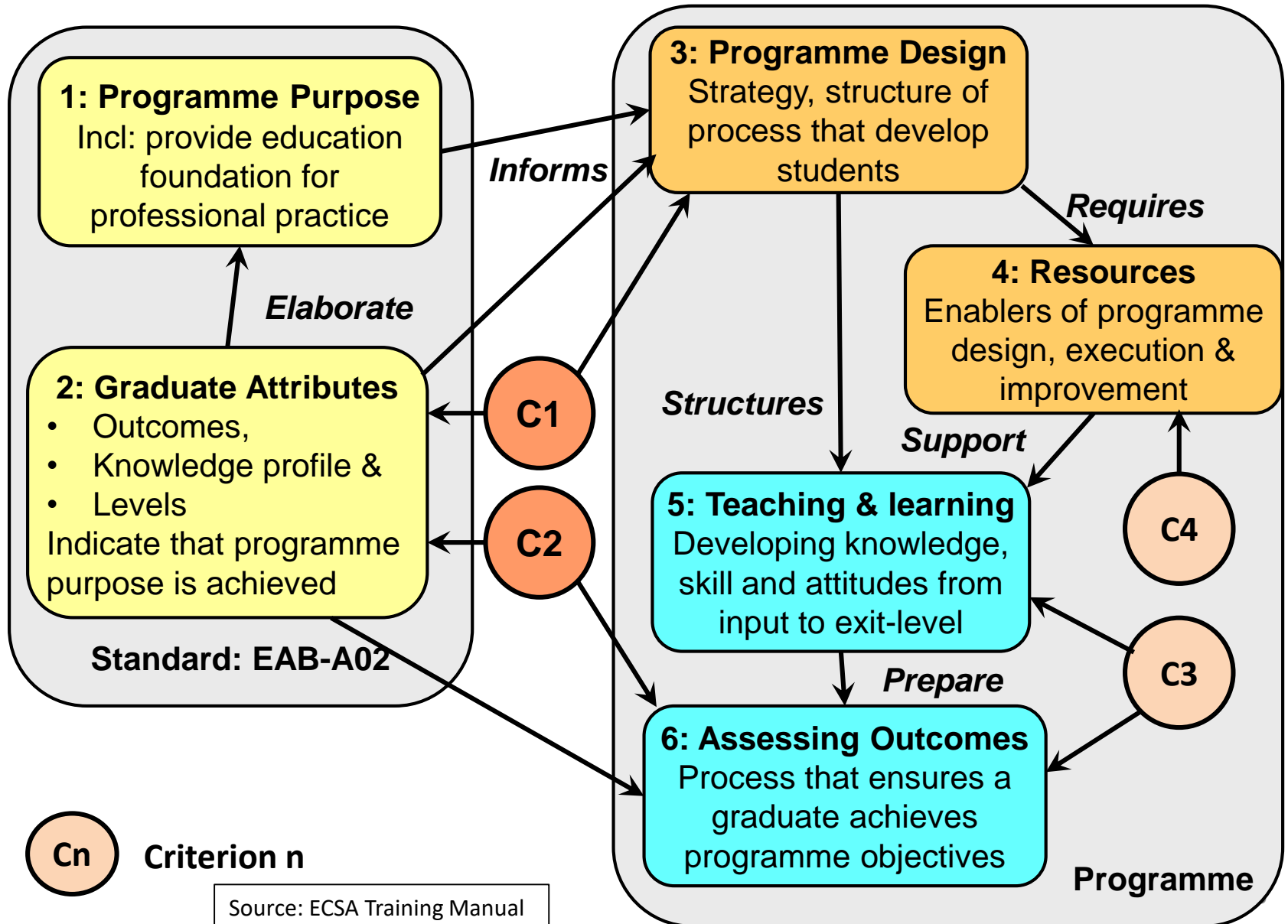
## IEA Criteria For Accredited Programmes

The **IEA criteria** for accreditation include requirements for:

- 1) Programme outcomes that are consistent with the purpose of the programme;
- 2) A curriculum providing a broad basis for engineering practice;
- 3) A suitable environment to deliver the programme;
- 4) Adequate leadership for the programme;
- 5) Suitably qualified engineering practitioners teaching in the programme;
- 6) Appropriate entry and progression standards; and
- 7) Adequate human, physical and financial resources for the programme.



# Link between standards and accreditation criteria





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### Main Elements of EAB-A03-P

**EAB accreditation criteria** are defined for **three stages in the lifecycle** of a programme: planning, students at halfway point, and producing graduates.

**EAB-03-P** defines

**Section 3:** the criteria that must be satisfied by an existing programme that has produced a cohort of graduates; they are:

**CRITERION 1:** Programme Educational Objectives, Credits, Knowledge Profile, and Coherent Design

**CRITERION 2:** Assessment of Graduate Attributes

**CRITERION 3:** Quality of Teaching and Learning Processes

**CRITERION 4:** Resourcing and Sustainability

**Section 4:** **CRITERION 5** which is the HEI's response to *Previously Identified Deficiencies and Concerns, Capacity for Improvement and Programme Review*.



## Main Elements of EAB-A03-P

**Section 5** defines the criteria for **Provisional Accreditation** of **Developing Programmes** that have not yet produced a **Cohort of Graduates**, but that have achieved **at least one-half of the academic credit units** for the programme.

**Section 6** defines how the criteria are applied to a **proposed new programme** submitted for **Initial Evaluation**. Proposed and developing programmes must be planned to meet the accreditation criteria.

**Section 7** defines criteria for Programmes submitted for **Desktop Evaluation**.





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### Criterion 1: Programme Educational Objectives, Credits, Knowledge Profile and Coherent Design

The programme must be planned and executed to have:

- PEOs that are consistent with the **mission** of the institution, requirements of **stakeholders**, the **Programme Outcomes**, and the expected achievements of **graduates in their professional life** a few years **after graduation**. The PEOs must be considered in the **design and review** of the **curriculum**.
- Total (**minimum**) **credits** and **knowledge profile**, in respect of the Mathematical Sciences, the Natural sciences, Engineering Sciences, Design & Synthesis, and the Complementary Studies, as specified in EAB-A02-P;
- A **coherent core** of mathematics, natural sciences and engineering fundamentals **appropriate** to the **purpose of the programme**;



## Criterion 1: Programme Educational Objectives, Credits, Knowledge Profile and Coherent Design (continued)

- **Specialist** engineering study at **exit level**;
- A **minimum** (8 weeks) continuous period of **Industrial Training/Work Based learning** to be completed before the final semester;
- **Laboratory experience**. Laboratory work should be designed to **complement learning through theory**. Instruction in **safety procedures** must be included.
- A **Final Year (Capstone) Project**.
- A **designation (qualifier) consistent with the programme's purpose and engineering sciences content**;



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### Criterion 1: Programme Educational Objectives, Credits, Knowledge Profile and Coherent Design (continued)

- **Explicit rules of combination and progression** from entry to graduation. **Entry requirements** for and process of **admission** of students, including **alternate entry mechanisms** (including foundation programmes, credit transfer and/or exemption, recognition of prior learning) to the programme must be **explicit** and **published**;
- **Explicit horizontal and vertical articulation options**: policies and rules for moving at the same levels or to another between programmes.



## Criterion 2: Assessment of Graduate Attributes

The **Programme Outcomes** are **mapped** against the **Graduate Attributes** indicating the specific module and the academic cycle (or semester) in which each attribute is developed and explicitly addressed.

The **assessment** process within the programme must:

- Ensure that **all graduates satisfy each graduate attribute**;
- Use a **documented set of assessment criteria and processes** that, taken together, demonstrate that the **attributes are satisfied at the level indicated by the range statement**;
- **Evaluate the degree of achievement of Programme Outcomes** by the students. The results of this process shall be applied for **continuous improvement** of the **programme**.



## Criterion 3: Quality of Teaching & Learning Processes

The programme must provide an *effective teaching and learning process toward achievement of the outcomes* as evidenced by the following:

- The *content, learning objectives, expected outcomes and method of assessment* for each module of the programme are defined and documented and are available to *staff and students*.
- For *each* Graduate Attribute (GA), the *modules in which GA assessment* takes place, *the method of assessing* the GA and the *level of achievement* required of the students must be provided.
- The *teaching and learning strategy and methodology* is designed to *achieve the outcomes of the programme* with students who meet the stated admission criteria.



## Criterion 3: Quality of Teaching & Learning Processes (continued)

- **Suitable *learning* opportunities** are provided to facilitate the acquisition of knowledge and skills specified in the programme outcomes.
- **Effective programme co-ordination by full-time staff.**
- The ***learning*** process encourages **independent learning attitudes** and abilities, and an appropriate mix and balance between different teaching and learning methods is maintained to encourage **active participation of students** in the teaching and learning process.
- The ***learning progress*** of students is **appropriately monitored** and where necessary, academic development support is provided to students through structured and monitored interventions.
- ***Assessment*** practices and procedures provide **feedback to students** at regular intervals



## Criterion 3: Quality of Teaching & Learning Processes (continued)

- An *internal* process including *moderation* ensures that all forms of *summative assessment* of student performance within programme are *effective, fair, rigorous* and address the stated learning objectives and outcomes.
- GA *assessment* is subject to *external moderation*.
- The *teaching and learning process* is *monitored* by an effective *quality assurance* process that supports *continuous improvement*.
- *Student retention* and *throughput rates* are *monitored* and measures are taken to identify and address factors that adversely affect throughput.



### Criterion 4: Resourcing and Sustainability of the Programme

The programme must be adequately planned, resourced, led and executed to ensure that it is sustainable over the period of accreditation.

- The **level of selection of *students*** is commensurate with the **programme's academic requirements**.
- The **number of *students*** admitted takes into account the **capacity** of the programme to offer **good quality education** and to meet **professional requirements**.
- The selection and admission of ***students*** is linked to the institution's **equity** and **diversity** plans.
- The ***staff*** members responsible for leadership, planning and assessment at the exit level are professionally and **technically** competent in the respective disciplines. **Registration with CRPE** as **PE** provides the norm for professional standing.





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### Criterion 4: Resourcing and Sustainability of the Programme (continued)

- The academic *staff* responsible for the programme are **suitably qualified**, have **assessment competence** and possess sufficient and relevant knowledge and teaching experience to **implement the outcome-based approach** to education
- The academic *staff* members have the range of specialities and abilities to teach at specialist and fundamental and are expected to hold a **post-graduate degree** at least for teaching the **core and specialist** modules.
- *Staff* members have **research** profiles relevant to the programme.
- Academic *staff* teaching modules that are primarily **design** in content are **qualified** to teach the subject matter by virtue of **education and experience or professional registration**.
- *Staff* members supervising the **Final Year Capstone Project** should have **relevant educational qualifications**, and **preferably, professional registration**.



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### Criterion 4: Resourcing and Sustainability of the Programme (continued)

- The number of **academic** and **support staff** is sufficient for the programme
  - i. at least **8 academic staff** of whom **at least 4** should be engaged on **full-time basis** and whose first degree must be in the appropriate engineering discipline.
  - ii. at least **one full-time member** holding **professional engineering registration** with CRPE or a Washington Accord signatory. Staff teaching **engineering design** or supervising **Final Year projects** have **industry experience** or are engaged in **engineering consultancy if not holding a professional registration**.
  - iii. the full-time equivalent academic **staff to student ratio** shall ideally be **1:20** or better to enable an effective delivery of teaching and learning while at the same time enabling faculty-student interaction.
- **Staff** members have **research** profiles relevant to the programme.
- Appropriate **research development opportunities and programmes** for **staff** members are in place.



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### Criterion 4: Resourcing and Sustainability of the Programme (continued)

- Laboratory and Library Facilities
- Institutional support and Financial Resources
- Academic Development of students
  - programmes are designed to match the students' state of preparation and progression towards the main programme;
  - staff responsible for the academic development programmes are adequately qualified, experienced and skilled;
  - the academic development programmes are quality assured.



### Criterion 4: Resourcing and Sustainability of the Programme (continued)

- **Governance and Impact**
  - effectiveness of the programme in meeting its objectives are assessed at regular intervals to improve programme design, delivery and resourcing and provide for staff development and student support.
  - governance structure of the programme must assign authority and responsibility for the formulation and implementation of policies that enable the programme to fulfill its mission.
  - the organizational structure within the HEI and all decision-making processes must support the achievement of programme educational objectives and programme outcomes.
- **Continuous Improvement**
  - The HEI must provide resources for the operation and implementation of mechanisms for assuring and improving its quality to demonstrate the continual improvement process.



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### Criterion 5: Response to Previously Identified Deficiencies and Concerns, Capacity for Improvement and Programme Review

- **Deficiencies and concerns** identified at the previous visit must be **adequately addressed**:
  - (a) In the case of an Interim Report, Interim Visit or Final Visit:
    - A statement indicating how the deficiencies identified at the previous visit have been remedied;
    - A statement of major changes to the programme, which are unrelated to the deficiencies
  - (b) If concerns were expressed in the decision letter of the previous visit:
    - the provider's response to these concerns must be detailed.



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### Section 5: Criteria for Provisional Accreditation of Developing Programmes that Have Not Yet Produced a Cohort of Graduates

Programmes that have achieved **at least one-half of the academic credit units** but have **not yet delivered** a cohort of graduates.

The programme must:

- 1) Satisfy **CRITERION 1** as demonstrated by the **implemented part** of the programme and as **documented by the part** of the programme **not yet implemented**;
- 2) Present a detailed **assessment plan** that demonstrates how the programme **intends satisfying CRITERION 2**;
- 3) Present **evidence of teaching and learning effectiveness** against the sub-criteria of **CRITERION 3**:
  - (a) drawn from the part of the programme already implemented and
  - (b) in the form of a plan for achieving effective teaching and learning for the remainder of the programme;



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### Section 5: Criteria for Provisional Accreditation of Developing Programmes that Have Not Yet Produced a Cohort of Graduates (continued)

- 4) Present **evidence of adequate resourcing and sustainability** of the programme against the sub-criteria of **CRITERION-4**. In particular, resources (once-off and ongoing) already available, committed and requested for the programme against the sub-criteria of CRITERION 4 must be adequate.
- 5) Demonstrate the **effectiveness of measures** taken to **address concerns** raised during the **Initial Evaluation**.



## Section 6.1: Criteria for New Programmes submitted for Initial Evaluation

An **Initial Evaluation** on a new programme considers the extent to which the programme:

- 1) Satisfies **CRITERION 1**, as judged from a fully detailed proposed programme;
- 2) Presents a detailed assessment **plan** that demonstrates how the programme **intends satisfying CRITERION 2**;
- 3) Presents a detailed **plan** for achieving teaching and learning effectiveness against the sub- criteria of **CRITERION 3**;
- 4) Presents evidence of **planning and institutional commitment** to the programme and **providing resources** for both start-up of the programme and on an ongoing basis **against CRITERION 4**.





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### Section 6.2: Criteria for New Programmes submitted for Simplified Initial Evaluation

Where a programme qualifies for **Simplified Initial Evaluation** only **CRITERION 1** is considered.

### Section 7: Criteria for Programmes Submitted for Desktop Evaluation

A programme submitted for **Desktop Evaluation** is judged against **Criteria 1 to 4**, and **5** if a **resubmission** is under consideration.



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**THANK YOU**